

*110*  
*CCXX*  
The Art of  
**CHIRURGERY**  
Explained in  
**SIX PARTS.**

Part I. *Of Tumors* in  
forty six Chapters.

Part II. *Of Ulcers* in  
Nineteen Chapters.

Part III. *Of the Skin, Hair*  
*and Nails*, in Two Sections,  
and Nineteen Chapters.

Part IV. *Of Wounds*, in  
twenty four Chapters.

Part V. *Of Fractures*, in  
twenty two Chapters.

Part VI. *Of Luxations*,  
in thirteen Chapters.

Being the whole  
**FIFTH BOOK**  
OF  
**Practical Physick.**

By { *Daniel Sennertus* Doctor of Physick: And *R. W.*  
*Nicholas Culpeper* Physitian and Astrologer.  
*Abdiab Cole*, Doctor of Physick, and the Liberal Arts.

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OF  
Practical Physick.  
OF THE  
EXTERNAL DISEASES.

THE FIRST PART.  
Of Tumors.

Chap. I. Of the Nature, Causes, and Differences of Tumors.

The names  
of a Tu-  
mor.



WHAT External Affect which by the Latines is termed a *Tumor*, *Tuber* & *Tuberculum*, i. e. a greater or a lesse Swelling; the same do the

Oedema

Grecians call *Onchus*; it is likewise by *Hippocrates* and the ancient Greek Physicians named *Oedema*. For although in the account of latter Physicians, yea,

and in *Galen's* time also, such tumors as were soft, and though roughly handled were yet altogether void of pain, these only were said to be *Oedemata*, which the Ancients with an addition called *Oedemata Malibaca*, and *Anodyna*, that is, soft and painless Swellings: Yet this word *Oedema* with *Hippocrates* and the more ancient Physicians signifieth in general all, and every particular preternatural Tumor; as is observed by *Galen* in the 1. Prognost. text 29. in his Comment upon B. 4. of the Aphorisms, Aph. 34. on the fifth of the Aphorisms, Aphor. 65, 66. and elsewhere very frequently. Sometimes also by a general name they call it *Phyma*,

and then generally it signifies every Tumor that of its own accord, and without any external cause breaks forth, especially into some one or other outward part of the body; even as a Plant shoots out of the Earth: the truth of this will soon appear, if we consult *Galen* in the sixth of his Epidemics, Comment. 1. text. 23. In the Books of the more modern Latines, theirs especially whom they usually stile barbarous, or illiterate, all sorts of whatsoever Tumors are comprized under the name of an *Apothem*: nay more, among these latter Physicians there want not some, who haply ignorant enough of the Greek Tongue, make bold to write that all those are very much mistaken who assign any difference between the name of a *Tumor* and an *Apothem*: which Magisterial Censure of theirs notwithstanding clashes both with the Authority of all the more ancient Physicians, and the propriety of the Greek Tongue. for the Greek Physicians will have only that Tumor or Swelling which is come to a suppuration, to be called an *Apothem*, as after in the third Chapter shall be shewn; and by the Latines this Tumor is termed *Abcessus* and *Vomicæ*; but by the more Modern and ignorant Authors it is rendered *Exitura*, from a word taken out of the Interpreter of *Avicen*. But now, all Swellings (or Tumors) come not to a suppuration; as for instance, that which we commonly call *Erysipelas* or St. Antonies fire, *Herpes*, and oftentimes *Phlegmone*, which is an unnatural Swelling hot and red, and of such like Tumors diverts others.

Neither is this confusion and promiscuous use of names to be charged upon the Arabians, but upon

Tumors  
whether  
rightly  
called  
Apothem

Apothem  
what is it



upon the illiterate Interpreters of them, who have unskilfully rendered the Arabian words by such as are very unfit and improper. For the Arabians altogether as exactly as the Grecians have made a distinction in name betwixt Tumors and Apostems; calling Tumors by a general name *Bothor*, but an Apostem they termed *Dubelles* and *Dubellatum*. And therefore for the due and proper signification of each word, the Authors that have written in the same, and not in a differing Language, are to be consulted; that is to say, as *Galen* in his final Tract to *Tbrassybulum* (whether or no the art of preserving the health relate to Physick) in the thirty second Chapter tells us; if it be a word of the Assyrian Tongue, we must for the right understanding of it have recourse to those who were the Authors thereof; or if it be a word in the Persian, Indian, Arabian, or *Ethiopian* Language, or any other Tongue, we must accordingly apply our selves to such as are skilful therein.

*A Tumor*

Now then, what a Tumor may properly be said to be, we will here make an exact inquiry, with this proviso, of which the Reader is desired to take notice, that our chief and main drift is here to treat of such Tumors as are besides Nature's intention, and may therefore be justly ranked among the several kinds of Maladies, or Diseases. Now therefore every swelling or augmentation of a part beyond its natural habit may not be reputed a preternatural Tumor. For although some men that are fat and gross grow to a breadth and thickness beyond their Natural habit; yet notwithstanding, whenas hereby

*Every Tumor is not a Disease*

there is not the least hurt or detriment of any one action caused in them (in which case only something is said to be preternaturally affected) these may not be said to have in them any thing that is beside the intent of Nature, or preternatural, but only something that is not Natural, and above that which is according to Nature, as *Galen* saith. For there is this middle constitution betwixt those bodies that are in all points according to Nature, and those that have in them somewhat that is preternatural, or besides Nature's intention, as the same *Galen* gives us to understand in his Book of this sort of Tumors, in the first Chapter thereof. So then, albeit haply the growth of some one part may be extended beyond its natural habit, yet so that this notwithstanding its operations may not be impeded, and that there be not the least sense of pain accompanying it; in this case we say, that such like Tumor or Swelling is not besides Nature, neither as yet is it to be termed a Disease, but rather a symptom. And hence it is also that *Galen* in his Book of Tumors, entitles it, not of Tumors simply so called, but of Tumors preternatural. And much less reason is there that the Breasts of Nurses when they are distended with the abundance of milk, and here-

upon are wont to appear far greater than in those that give not suck; and likewise in child-bearing Women that the lower belly though exceedingly dilated in such especially who are near their time of Delivery, should be said to be affected with a Disease; in regard that these things happen according to the course and Laws of Nature.

But what a Tumor is, and unto what kind of Disease it belongs, is not altogether so manifest. For many and differing definitions hereof we find given by several Authors, which here particularly to recite is not requisite, nor worth the while; and *Galen* himself seems now and then to thwart himself, and not alwaies to be of one and the same judgment in giving us the definitions of this Tumor we are now treating of. For in his thirteenth Book, and first Chapter, of the Method of Physick, he tells us that a Tumor is a Disease wherein the parts have receded from their natural habit and quantity. And in his first Book of the causes of Symptoms, and the second Chapter, he refers Tumors unto organical Diseases; for there he writes, that *Phlegmones* or Inflammations, *Scirrhus* or hard Swellings in the Skin, *Abscessus*, i. e. Impostumes or Ulcers, and other affects of this nature are to be accounted Diseases of the parts instrumental. But in his Book of the difference of Diseases, Chap. 13. and of the Causes of Diseases, Chap. 6. he reckons up Tumors among the distempers arising from the first qualities, and the diseases of the similiary parts. The Physicians likewise that have written since his time differ in their Opinions. *Fallopins* adheres to *Galen's* Opinion in his 13. Book, Chap. 1. of the Method of Physick, before mentioned, and refers Tumors unto those Diseases we call instrumental, to wit, when there is a preternatural magnitude or augmentation. *Hieronymus Capivaccius* (in the Chapter where he writes concerning a Phrensie) tells us, that every tumor must needs be a disease in the *intemperies*, or distemper proceeding from the first qualities; and that there is no necessity why it should be accounted an Affect arising from an ill constitution: which Opinion of *Capivaccius* is assented unto by *Hieronymus Fabricius ab aquapendente*. But others there are, among whom *Eustachius Rudius* is one, who assert that a Tumor is an evil compounded of magnitude augmented, and a distemper alwaies accompanying it as its concomitant; and that the augmentation of magnitude with this *intemperies*, or distemper proceeding (as before said) from the first qualities, is the formal cause of every tumor; and *Rudius* determines that those tumors only which are caused in the parts by reason of a preternatural afflux of matter, are Tumors properly so called; but that the Tumors happening in disjoyntings or dislocations, in the falling down of the Intestines into the Cods, and in the Tumor *Aneurisma*, are not properly so to be accounted.

But

But if we exactly weigh this Controversie, and withal accurately sift out the signification of the word *Tumor*, and *Onchus*; and likewise if we will heedfully inquire into the essence of a Swelling,

The definition of a Tumor

as it may be considered in it self, we must then with *Galen* rightly define a Tumor under the notion of a swelling; that it is an affect or disease in the

which the parts of our body recede from their natural state by an augmentation of their magnitude. For the word *Onchus* with the Grecians sounds as much as the distance of the parts, to wit, by reason of their being extended in magnitude, breadth, and profundity; as is observed by *Galen* in the first Chapter of his Book of Humors: so that it may justly be reputed a grand absurdity in the definition of a Tumor, to assert that it is this or that, and in the mean time to omit the augmentation of magnitude; this being all one as to affirm that a Tumor may be without a Tumor, that is to say, a Swelling. For although it be a truth (which erewhile we hinted, and that which *Galen* likewise observes in his Book of the differences of Diseases, the twelfth Chapter) that a Tumor if it be not such, and to great that thereby any hurt and detriment shall accrue to the Member affected in any one of its operations, is not properly a disease, but a symptom; and that that preternatural Affect ought to be defined rather by the *intemperies* or distemper that accompanies it, and very much annoys the actions, then by the swelling, which in no wise impedes or offends them: Yet notwithstanding it will not therefore follow, that a Tumor also which is a disease, and which doth indeed so greatly hurt and hinder the operations, is to be defined rather by the *dyscrasie* and *intemperies*, than by the augmentation of magnitude. And the truth is, that very frequently Tumors when they have their original either from a fleshy, or from a boney and hard substance, or lastly from a flatulent Spirit, which is not internally either hot or cold, are altogether free from an *intemperies*, or, as we commonly term it, distemper. In the mean time notwithstanding we deny not but that other diseases that are no way essential to a Tumor may yet be joyned with and accompany this augmented magnitude which doth altogether constitute and make up the essence thereof. For if the matter causing the Tumors exceed in heat, cold, driness, or moisture, it forthwith derives this distemper unto the part affected; insomuch that hence it comes to pass that the disease also then concurs, and is concomitant with the *intemperies* or distemper. Moreover, if the same matter that either by corroding or distending any part disunite what before was close and compact, then there immediately happens that which we call the solution of Unity. Sometimes also it comes to pass that the figure and shape of some part is altogether marr'd, or at least very much vitiated; and sometimes likewise the Cavities, Pipes, and Pa-

sages are either compressed, or at leastwise very much obstructed through the abundant afflux of matter: the which accidents very frequently (if not for the most part) concurring with a Tumor, hence it is also that in the difference and cure of Tumors, we handle not only the augmented quantity, but likewise even all those other concomitant Diseases. Mean while it stands good for an undeniable truth, That a Tumor as such, that is, a Swelling, is an affect or disease in the magnitude augmented beyond Nature's intension, and hath its production from somewhat that is preternatural, and comes to be adjoynd to some one or other part. Nor is it of any validity what *Rudius* here objects, That in Tumors which have their original from the humors, and those likewise which have for their causes the strutting forth and falling down of parts, and such like, that there the difference is to be taken from the efficient, next, and containing cause, and that from this cause we may gain excellent, artificial, and profitable Indications; but not so from the consideration of magnitude augmented. For albeit they differ in the containing special cause, that this is now and then an humor, sometimes above, and sometimes also an Intestine or Gut fallen down; yet in the general cause they agree, which is some one thing or other preternatural added unto the part, and swelling it up into a Tumor. And in every Tumor (as it is likewise in all other diseases depending upon the cause containing) no profitable Indication can be gained, or may be expected from this cause, no not in those Tumors which have their dependance upon the influx of humor. For the general Indication (though it be altogether useless) is this, that the humor which lusterh up the part into a tumor is to be removed; but how and by what means this may be effected, is wholly left unto the skil of the knowing Artist. In the mean time I will not deny but that those tumors which have their original from the humors may fitly enough be ranked among the diseases that are compounded of augmented magnitude, distemper arising from the afflux of matter, and a vitiated figure; yet however this is not to be granted in all Tumors. And hence it is (without doubt) that *Galen* hath placed the Tumors one while amidst the Affects of the similiary parts, as in the twelfth Chapter of the difference of Diseases; and as soon again among those Diseases we call organical, and this he doth in the thirteenth of his Method, and first Chapter.

Neither is it to be denied, That now and then Authors whilst they make mention of preternatural Tumors do not intend all Tumors in general, such as are also those that are produced by the falling down of the bowels, or by some boney substance sticking out; but those in special which are caused by the afflux of humors; and these are evermore diseases that may properly be said to be compounded of magnitude augmented, *intemperies*,

ries, an unmeet figure, and most usually also the solution of Unity.

**The Cause** | The containing Cause of a Tumor, as we take it in the general, is touching beyond Natures intent added unto a part, which elevates, distends, and swells it up to a more than ordinary greatness.

**The Difference** | Now the matter which we say is added being threefold, to wit, a Humor, a Wind, and a solid Substance; the primary Difference then of Tumors ought to be taken from that which we commonly term the Containing Cause. Tumors then are sometimes thus differenced, that some are great, others not so; some external, some internal; some new, others that are of longer standing. But these differences are merely accidental, denoting a certain mutation or change, and an alteration of the condition, but the species or kinds they vary not in the least. But the differences specifical, and which constitute the several kinds, are taken from the matter and the containing Cause, which is threefold, as hath been said. First of all therefore Tumors derive their very being from the humors; but these as yet have not obtained any peculiar appellations to be called by, but at leastwise are all of them comprehended under the general name of a Swelling; yea, as some say, they are only called Tumors. Secondly, Winds if shut up in any part distend the same, and lift it up into a Swelling or Tumor; and this sort of Tumors the Grecians call *Emphysemata*, the Latines *Inflationes*, by reason of their windy original. In the third place, now and then somewhat resembling flesh, or skin, or that is hard and solid as a bone, and other such like matter is super-added unto some one part, and there causeth a Tumor or Swelling: But in regard that these very substances have their original from the humors, we will thereupon adjoyn this sort of Tumors unto the first kind. And lastly, even the very solid parts of the body themselves cause Tumors whenas they change their place, together with their situation, and slip down upon some other part, which they both distend and elevate: neither have these any peculiar names to be known by. There are yet some other differences behind. From the quality of the concomitant matter, some are said to be hot, others cold; some moist, others dry; some soft and loose, others hard. From their magnitude, the greater of them are by a general name simply called Tumors, the less *Tubercula*. From their situation, that some are internal, others external; and these again either more deep and profound, or else superficial. From their figure, some of them are said to be broad, others again sharp-pointed. But now to comprehend all those differences of Tumors under names, and to give you the number of them, is not very easie to do. Galen in the close of his Book of Tumors writes, That there was not any one kind of these preternatural Tu-

mors which there he had omitted, but that he had spoken of them all, and had not left any one unmentioned. And out of that Book *Johannes Philippus Ingrassias* (in his Book of tumors, first Tract, first Chapter, and second Commentary, pag. 77.) hath collected Sixty one Tumors, which he reckons up in this order:

1. *Corpulentia*. 2. *Phlegmone*. 3. *Abscessus calidus*. 4. *Sinus*. 5. *Fistula*. 6. *Abscessus ex solidis humidisve corporibus*, that is to say, an impostumated matter issuing from solid and moist bodies. 7. *Atheroma*. 8. *Steatoma*. 9. *Meliceris*. 10. *Anthrax*. 11. *Cancer*. 12. *Gangrena*. 13. *Sphacelus*. 14. *Erysipelas*. 15. *Herpes similiter*. 16. *Herpes Eschiamenos*. 17. *Herpes miliaris*. 18. *Scirrbus*. 19. *Ecchymosis*. 20. *Aneurisma*. 21. *Oedema*. 22. *Phagedena*. 23. *Ulcus Chironium, seu Telepium*. 24. *Scabies*. 25. *Lepra*. 26. *Elephantiasis*. 27. *Exostosis*. 28. *Satyriasmus seu Priapismus*. 29. *Achor*. 30. *Cerion*. 31. *Myrmecia*. 32. *Acrochordon*. 33. *Psyracion*. 34. *Epinyctis*. 35. *Dorbien*. 36. *Phyma*. 37. *Bubon*. 38. *Phygetblon*. 39. *Struma*. 40. *Sarcocele*. 41. *Hydrocele*. 42. *Epiplocele*. 43. *Emerocele*. 44. *Enteropiplocele*. 45. *Cirsocele*. 46. *Varices*. 47. *Bubonocoele*. 48. *Exomphalos*. 49. *Ascites*. 50. *Tympanites*. 51. *Anasarca*. 52. *Epusis*. 53. *Parulis*. 54. *Thymus*. 55. *Uva*. 56. *Paristimia*. 57. *Antiaides*. 58. *Polypus*. 59. *Encanthus*. 60. *Unguis*. 61. *Staphyloma*.

But *Ingrassias* himself not content with this number, adds unto these one hundred sixty five more; to wit, of such properly belonging unto the head, twenty seven, the which in page 301. he enumerates after this manner:

1. *Ecchyma*. 2. *Elcydion*, five *Papilla*. 3. *Sycon*, that is, a Fig, or pushes in the head resembling it. 4. *Exanthema*, that is, an Ulcerous blowing out like a flower. 5. *Ganglion*. 6. *Hydrocephalus*. 7. *Syriasis*. 8. *Phrenitis*. 9. *Letbargus*. 10. *Typhomania, seu agrypon coma*. 11. *Catochus Pauli*. 12. *Cataleptis, seu Catoche*. 13. *Carus*. 14. *Apoplexia*. 15. *Rhia alfabian*. 16. *Sibare*. 17. *Fatera*. 18. *Sekaklos*. 19. *Testudo*. 20. *Talpa*. 21. *Topinaria*. 22. *Lactumen*. 23. *Cornu*. 24. *Alopecia*. 25. *Ophiasis*. 26. *Pityriasis*. 27. *Phtiriasis*.

Those properly belonging to the Eyes and the parts thereof, sixty three, which in page 351. he reckons up in this order following. 28. *Proposis Galeni, five eopiesmos Pauli*. 29. *Taraxis*. 30. *Ophthalmia*. 31. *Epiphora introductorii*. 32. *Chemosis*. 33. *Xerophthalmia*. 34. *Sclerophthalmia*. 35. *Scirrhopthalmia*. 36. *Pblythana*. 37. *Botbriorion*. 38. *Caloma*. 39. *Argemon*. 40. *Epicaroma*. 41. *Encaroma*. 42. *Myocephalos*. 43. *Melion*. 44. *Clavus Pauli et Aetii*. 45. *Clavus introductorii & Celsi*. 46. *Hypopyon*. 47. *Onyx*.

Tumors, their number and names according to Galen

Tumors, their number and names according to Ingrassias. Tumors of the Head are twenty seven.

Tumors of the Eyes, and their parts, 63.

that



that is, Unguis, a Nail. 48. Hyposphagma. 49. Achlys Aetii. 50. Nephelion Aetii. 51. Ula, or Nephelion. 52. Leucoma. 53. Sebel. 54. Botbor Avicennae. 55. Hymene panastasis. 56. Nyctalopia. 57. Anthracosis. 58. Carcinoma. 59. Synchysis. 60. Mydriasis. 61. Proptosis Pauli. 62. Ptylosis. 63. Madarosis, or Melpiosis. 64. Pladarotes. 65. Emphysema. 66. Symphysis, or Anchylosis. 67. Eutropion. 68. Lagophthalmos. 69. Trachoma. 70. Sycosis. 71. Tylosis. 72. Dasyria. 73. Pachytes. 74. Barytes. 75. Hydatis. 76. Psocoptibalmia. 77. Trisbe. 78. Thalaxion. 79. Porosis. 80. Litbiasis. 81. Alanisfac. 82. Sude Avicennae. 83. Carcosis. 84. Lupia. 85. Mydesis. 86. Pustula Abenqaris. 87. Scleriosis. 88. Anchylops. 89. Aegylops. 90. Epinyxis Plinii.

Tumors in all other parts of the Body, 97.

And after these he mentions many more in other parts, to the number of ninety seven; and in this following order he sets them down. 91. Auritus. 92. Parotis. 93. Pherea. 94.

Oxena. 95. Sarcoma. 96. Thelus Albuc. 97. Albarbian Avicennae. 98. Chasium Arabum. 99. Hemorrhoides Arabum. 100. Batrachos. 101. Glossomegethos. 102. Ancyloglosson. 103. Aphtha. 104. Cynanche. 105. Paracynanche. 106. Synanche. 107. Parasyanche. 108. Gongrona. 109. Folium. 110. Bronchocele. 111. Albadal. 112. Dionysijci. 113. Hypopion. 114. Fonti, or Vari. 115. Montagra. 116. Ebelis. 117. Ignis sylvaticus. 118. Noli me tangere. 119. Butiraga. 120. Gutta rosacea. 121. Spargangsis. 122. Chondriosis. 123. Trichiasis. 124. Gynecomastion. 125. Pleuritis. 126. Peripneumonia. 127. Phloe. 128. Alhabalop. 129. Naptia. 130. Cyphosis, or Cyrtosis & bybosis. 131. Lordosis. 132. Scoliasis. 133. Coeliacus. 134. Aurys Rajis. 135. Colica. 136. Hos. 137. Condylomata. 138. Hemorrhoides. 139. Marsca. 140. Hepaticus. 141. Cachexia. 142. Altherel. Bellunenjis. 143. Tbelegi. 144. Altherbel. Bellunenjis. 145. Splenicus, Aurelianus. 146. Nephritis. 147. Litbiasis. 148. Satyriasmus Pauli. 149. Cercosis. 150. Mola. 151. Nymphomegethos. 152. Kion Hippocratis. 153. Seliroma Pauli. 154. Arthritis. 155. Podagra. 156. Cheiragra. 157. Ischias. 158. Lupia, Guidonis. 159. Tophi. 160. Cornua Avicen. 161. Anchylosis, or Anchylos. 162. Paronychia. 163. Pterigion, Celsi. 164. Condyl. 165. Perniones. 166. Gemursa, Plinii. 167. Dentes muris, Bellunenjis. 168. Alliatban. 169. Lupus. 170. Daetilia, Haliab. 171. Malum mortuum. 172. Terminthos. 173. Emphysema. 174. Phlyctena. 175. Turmusios Avicen. 176. Impago. 177. Effere. 178. Palmos. 179. Clavus. 180. Calli. 181. Aegritudo bovina, Abenz. & Albuc. 181. Draconium. 183. Syrenes, or Pedicelli, Guidon & Argelate. 184. Variole. 185. Morbilli. 186. Rubeola. 187. Crystalli. 188. Exantemata. 189. Ecthymata, Fernel. 190. Hidroa, or Sudamina. 191. Epinyxis, Romanorum. 192. Bothon lines. 193. Ganglia. 194. Seps Hippocr. 195. Spi-

na ventosa. 196. Bubasticon Ulcus. 197. Hyper-sarcon. 198. Cacoethes. 199. Sepedon. 200. Nome. 201. Therioma. 202. Herpes Esthiomenos Celsi. 203. Herpes esthiomenos, Avicen. 204. Thymion, Celsi. 205. Ignis sacer, Celsi. 206. Cerion, Pauli. 207. Paratrimmata. 208. Apofirmata. 209. Zerma. 210. Rancula. 211. Spina. 212. Morfus Diaboli. 213. Patursa, that is, Morbus Gallicus. 214. Scopuli. 215. Tincosati. 216. Pinta. 217. Spili. 218. Tufus, Avicen. 219. Eparma, Hippoc. 220. Rosboth. 221. Cunus, Rafis. 222. Albohir, Albucasis. 223. Nahir, Albuc. 224. Alchalan, Abenz. 225. Arcella, Abenz. 226. Rosule satarixia. So that the number of all the Tumors recited by Jobannes Philippus Ingrassias amounts unto two hundred twenty six.

But that Entites should be multiplied in this manner without any cause is altogether unfitting. For, as all the affects which are here reckoned up under the name of Tumors are not properly to be accounted Tumors; besides that one and the same Tumor is sometimes repeated under different names: So again, Ingrassias having not at this time compleated the remaining Sections of his Works concerning Tumors, it is not sufficiently apparent what Tumors he would have us to understand under some of these names. Now for the truth of this, that I may give you an instance or two of what hath been said; he reckons up among Tumors, Sinus and Fistula, Ulcus Chironium, and divers other Ulcers. But before of since Ingrassias, who hath there ever been that hath taken the liberty, or made so bold to enumerate among the Tumors that are properly so called, such as are these following, viz. Leishargus, Typhomania, Catocbus, Catalepsis, Carus, Apoplexia, Lordosis, Coeliaca affectio, Colica, Affectus hepaticus, Splenicus, and other such like Affects, which relate either to Symptoms, or the kinds of other Diseases, rather than unto Tumors. And in very truth many of the Tumors wherewith this Catalogue is stuff, are not peculiar kinds of Tumors, but only differences of their species according to the parts affected.

Now therefore we conceive that there are two main Differences especially to be heeded in Tumors; one whereof ariseth from the variety of Causes, and the other is by reason of the parts affected. We have said before, that the containing cause of a tumor is threefold, a Humor, a Wind, and a solid Substance. Again, the humors are various & much different, to wit, Blood, Phlegm, Melancholy, a black humor, a watery and wheyish humor, and divers other thin excrements; as also mixt humors, and matter into which other humors degenerate, and likewise malignant humors.

From the Blood there is caused an extraordinary Corpulency (which the Greeks call Polysarcia) and an Inflammation. There are likewise that re-

Tumors, their Differences.

Their Cause containing:

fer a Gangrene & a *Sphacelus* unto an Inflammation, in regard that an Inflammation sometimes degenerates into them. But because that a Gangrene and *Sphacelus* do very often proceed from other causes without an Inflammation, and have not alwaies a Tumor to accompany them, and are of neerer alliance unto Ulcers, very usually degenerating into them; we wil therefore treat further of them anon when we come to speak of Ulcers. But with more right it is that unto an Inflammation we refer an *Erysipelas*, or *Rosa* (as it is commonly termed) *Bubo*, *Furunculus*, *Phyma*, *Phygetblon*, *Parotis*, *Carbunculus*, *Paronychia*, *Perniones*, *Eccymosis*; as afterward from the special Explication of these Affects wil further appear.

From Choler is produced *Herpes*, and its differences.

From the Piquitous or Phlegmy humor proceeds *Oedema*.

From the Melancholly humor, *Scirrhus*.

From black Choler, *Cancer*.

From the watry humor, *Hydrocephalus*, *Hernia aquosa*.

But of the wheyie humor, and the thin excrementitious matter called *Ichora*, from which various leish swellings by the Latines called *Tubercula* do arise, there is a very vast difference: and oftentimes these serous and wheyie humors, as likewise the salt and cholerick humors are mingled with other, and from hence originally proceed divers Wheals or Pustles in the skin as to instance, *Psoriasis*, *Vari*, *Sudamina*, *Spinytides*, and *Terminthi*, *Effere Arabum*, *Elecdia*, *Scabies*, *Lepra Gracorum*, *Vitiligo*, *Imperigo*, and *Lichen*, *Crusta Lattea*, *Achores*, *Favi*, *Tinea*, with many others of the like Nature.

Moreover from the humors there is derived also a certain peculiat kind of tumors, yet nevertheless differing from those we have hitherto made mention of in a twofold respect. The former difference lies in this, that it proceeds not from one simple humor, but from more, to wit, Phlegm, I mean such as hath other humors, Melancholly or Choler mixt therewith; yet notwithstanding so, that the cause conjunct may not any longer be said to be an humor, but some other matter generated from out of those humors. The later difference consists in this, that the aforesaid matter is included in some one peculiar Membrane. Tumors of this sort are, *Strume*, and *Scrofule*, *Bronchocele*, *Ganglia*, *Nodi*, *Melicerides*, *Atheromata*, *Steatomata*, *Testudo*, *Talpa*, and *Natta*.

Out of the humors likewise (where you are to understand such humors that degenerate into another) take their rise and original those tumors which the intelligent Artift calls, *Polypus*, *Tumida sub lingua*, *bernia carnosa*, *Verruca*, *Fungi*, and others the like. There are moreover tumors that have their very being from malignant humors; and these are *Variola*, *Morbili*, *Lepra*, as

the Arabians, or *Elephantiasis*, as the Greeks name it, Tumors Venereal of different kinds, *Bubones*, and pestilential Carbuncles.

From flatulency or windiness are derived *Emphysemata* as the Grecian Authors, or *Inflationes*, as the Latines call them, and all other flatulent tumors whatsoever.

From the solid parts lying out of their proper places arise *Hernia* in the Cods and Navel, when the Intestines fall down thither; *Epiptocle*. And hitherto also is to be reduced *Aneurisma*, a tumor that hath its original from an Arterie dilated, as in like manner *Varix*, being a tumor from a dilated Vein.

From the Bones proceeds that which we term *Exostosis*; and from the Vertebrae or turning Joynts of the Back, when they stick out, is caused *Gibbositas*; like as in other parts also tumors arise, when disjoynted or broken Bones slipping out of their own place happen to fall down thither.

But now those tumors receive various appellations by reason of the part affected, of which enough hath been written already in its due place.

And moreover, as concerning divers of these Tumors this is to be taken notice of; that very many and that in most Countries, have indeed been not a little infested by them; and that they have been likewise as ordinarily cured of them: but yet notwithstanding, what the German, Italian, French, Spanish and other names of several Nations are; and unto what names of the Grecians, Latines, and Arabians they may fitly answer, is not alwaies manifest: which very thing hath exceedingly perplexed and puzzled the studious Physician in his perusal of Authors. And of this also *Johannes Philippus Ingrassias* who took a world of pains in comparing together and explaining the Greek, Latine, and Arabian names, extremely complains, as wil appear by what he writes in his Book of tumors, Tract. 1. Chap. 1. page 220 after this manner. I cannot but exceedingly admire, and withall greatly lament the to great unhappinefs of our Age, in the which we are evermore infested with divers and almost innumerable kinds of Diseases, and day after day are sadly afflicted especially more with this kind of Tumor (he here speaks of *Dorbien* or *Furunculus*) by reason of an unwholesome and corrupt kind of Dyer; inso much that questionless the Affect is most perfectly known; but as for name it hath none, other than what is as obscure (and as ambiguous unto most men) as that of *Epinythia*, and *Psyracion*; so that hence we find it a business of the highest difficulty to discover the proper head of the Disease, and the Method of curing it, either in the Latines, or the Greeks, and Arabians themselves writing in the Latine Tongue.

Of the signs Diagnostick, Prognostick, and of the indications and Cure of Tumors in generall, some

some there be that are wont to affect many things. But in truth there is but very little that can be said as concerning Tumors in this manner, that is, generally considered, but what for the most part is agreeable to certain species of them; of all which we will now speak in order, and particularly, in the Chapters following.

Chap. 2. Of Tumors arising from Humors in general.

**T**hat kind of Tumors which is caused by the Humors is found to be most frequent and usual; and therefore we will treat of it in the first place. The primary and highest cause hereof is a humor elevating and raising up a part beyond Natures intension unto a greatness more than is ordinary. Which said humor having for the most part a certain excess of qualities adjoynd with it (and thereupon becomes either hot, or cold, or moist, or dry) derives that quality unto the part affected; the which quality since it differeth from the temper of the grieved Member, must therefore necessarily excite in the same an unequal temper; and hence it is that an intemperies or distemper is concomitant with a Tumor.

The Causes.

Now of the humors that cause these Tumors there is great diversity. For both the Natural and preternatural humors, whose differences we have already spoken to in their proper place, excite Tumors; & hereunto belongs the matter that is wheyey and waterish, filth and corrupt matter, and all things else into which the humors degenerate, and which are to be found in Tumors, and yet are not in the number of the parts of the Body; of which

*The variety of such things as are often found in Apostems.*

there is great variety. Galen in his second Book to *Glauco*, and seventh Chapter, writes, that in Apostems there have been found to be substances contained like unto Stones, Sand, Shells, Wood, Mud or Slime, the filth of Baths, the dregs and lees of Oyl,

together with many other such like resemblances. And in his fourteenth Book of the Method of Physick, and twelfth Chapter, he further informs us that in Tumors have been discovered substances resembling Nails, Hairs, Bones, Shells, and Stones. And that Worms also may be found in Tumors frequent experience testifieth; *Fallopins* with others have seen such Tumors; and I myself have more than once beheld the like. *Nicolaus Remigius* in his third Book of the worship of Devils, and first Chapter writes, that with his own Eyes he beheld while they took out of an Impossu-  
ful of filth, and opened in the Calf of a Mands Leg, a certain round substance or Globe, such as is to be seen in Weavers Shops. And *Wierus* in his Book of the Devils impossu-  
tures Chap.

13. relates that in the incision of an Impossu-  
ture on the left side of a certain Girl, above the Spleen, there was taken forth an Iron Knife, and after it there issued out abundance of filth and corruption. The like whereunto *Langius* also hath observed, in his first Book, and thirty eighth Epistle. Now if any such strange thing chance to happen, the Vulgar People are wont to ascribe it presently unto the Sorceries, Spels, and Charms of their Devilish Neighbors. But there is no necessity, why for all things that are evacuated out of Impossu-  
tures besides purulent matter, we should by and by have recourse to such Causes as these, or rank them among the supernatural Causes of humors, seeing that many of these contingents may be generated out of the humors erewhile rehearsed. For whenas Experience makes it manifest, that in most parts of mans Body small Stones, Sand and Gravel, Hairs, or such like, and also divers kinds of Worms may be produced out of the excrementitious humors; and that likewise (not only in the Body of man) strange and wonderful kinds of Worms and other little Animals may be bred out of the Corruption of others, it should not seem any great wonder, that the matter in Tumors (especially if it be naught, and hath been long there shut up and detained) doth admit of those various and strange mutations, happening by means of its rottenness and putrefaction. But yet notwithstanding, if such things be found in Impossu-  
tures that are come to a suppuration, and likewise in Tumors, which cannot be generated in mans Body by nature, or at leastwise by Natures strength alone without the concurrence of Art, (such as are all things formed of Metals, Bodkins, Knives, Iron Nails, and the like) then indeed they cannot be referred unto natural causes; but may upon more than probable Grounds be imputed unto the Impossu-  
tures, subtilty, and power of the Devil. But as for the manner how such things may be either generated in the Body, or covertly conveyed into it, is not my purpose here to determine. I therefore proceed to dispatch what I have further to deliver touching the rest of the causes of Tumors that take their rise and original from the humors.

So then, as for what concerns the causes remote; be they what they will for their kind, they may easily be known, if we do but enquire into the manner how Tumors come to have their first being; and withal take notice from whence, and after what sort, or by what means that humor which hath rightly gained to be stiled the containing Cause, comes into the part affected. Now therefore that humor which is the highest and containing Cause of a Tumor is either insensibly and by degrees heaped up in the part, or else altogether as in a heap (which the Grecians express by the word *Astbroos*) flow into it. The matter is gradually, and by little and little

*Tumors, how caused by congestion or the heaping together of humors.*



little gathered together in the part affected, primarily and most especially, by reason of somewhat amiss in the member, to wit, when either the concoctive power is grown weak, and therefore cannot as it should digest the nutriment, but generates more excrements than it ought to do; or else when the expulsive faculty doth not cast out all the excrements as it ought to do; and this may come to pass either through its own weakness, or otherwise because the way by which those excrements should be ejected is not sufficiently open. And again, a humor is likewise then heaped together in the parts, whenas the food it self is naught and unwholsom; for hence it happens that either so great abundance of excrements are caused that the expulsive faculty cannot cast them all forth, or else that they are so thick that Nature cannot easily expel them. But upon what causes these causes do depend hath been already declared in its proper place; nor is it requisite that we should at large repeat what hath been spoken. Only in a few words take this; That the weakness of the faculties wholly depends upon the *intemperies* or distemper of the parts, and the decay of their native heat. The passages are obstructed by overmuch and thick matter, which happens to be condensed by the vehemency of cold. Meats of an ill juyce produce store of excrements: Now what these meats are, *Galen* gives us to understand, in his Book touching meats of a good and evil juyce.

*tumors, how  
caused by an  
efflux.  
How by at-  
traction.*

A Humor then flows to some part (this being in truth the more usual cause of Tumors) when either it is drawn by that same part, or transmitted unto it from some other place.

Attraction primarily proceeds from heat caused either by overmuch motion, or from the heat of the Sun and Sun-beams, from the fire; or lastly from any sharp Medicine taken in. For the parts so soon as they are heated by these causes draw unto themselves humors from the rest of the body, although there be not therein any excessive store of humors; and yet I deny not but that the more the body abounds with humors, the greater is the store of them that is attracted.

Moreover, Pain likewise frequently enough excites Tumors, by attracting the humors unto the part aggrieved. Yet we say not that pain of it self draws the humors, but that this is done by some other means; and commonly it is said to draw, for these three causes. First, because Nature while she attempts to relieve the suffering part sends in an extraordinary supply of blood and spirits to the part in pain, and this she doth with an endeavor more than usual; so that by this means she over fills, and hurts the parts she intended to succour. Secondly, the grieved part by this time grows hot from that abundance of blood and spirits transmitted thither by Nature; and

hereupon falls to drawing more than before, by reason of this adventitious heat. And lastly, pain weakens the Members. Now the Members once weakened, if they attract not, yet they readily receive, and in the least resist not the matter flowing in upon them from several parts.

Secondly, A Tumor is caused by a defluxion, when as the humors are transmitted unto some part, although they be not drawn by that part. For whereas there is in every part a faculty not only of attracting all things familiar and agreeable unto it, but also of expelling and casting out whatever is superfluous and burdenson; hence it is that being stir'd up and provoked by the excess or offensive quality of the excrements and humors it expels and thrusts forth unto some other part whatever is useless, or at least burdenson unto it. Where if it be not digested or evacuated by transpiration, it is thence again forced unto some other parts until at length it come unto the weakest, which is not able to expel these transmitted humors; so that being here left they cause a Tumor. For it cannot be that a Tumor should be caused by the matter transmitted and sent from divers places, unless we grant (as needs we must) that there is a part which sends them, a part receiving them, and the passages by which the humors flow. The parts do then transmit when the vigorous faculty by the quality or store of matter is incited to expulsion. For unless the faculty were provoked, it would never attempt this expulsion; and unless it were strong and vigorous, it could never effect it. And this is likewise much furthered by the external causes exciting the fluxion, to wit, Heat, which attenuates and dissolves the humors; and cold, that by constriction presseth the parts together, and thereby causeth the greater afflux of the said humors.

Notwithstanding, unto these two may be added also a third cause of the defluxion, and that is a certain (*sem*, or) violent issuing forth of the humor it self, as usually it doth appear in persons that have the Dropsie, where we find a water through its own weightiness descending into the Feet and Cods; which motion notwithstanding is wont to cease in the night time; but this would not be if the humor were expelled by Nature; and not rather (as in truth it is) forced down by its own gravity.

Now as for the humors flowing together from elsewhere, they are received by such parts as are feeble, and through their weakness altogether disposed for the reception of a fluxion. For evermore the more vigorous Members send away that which is superfluous unto the weaker. The weaker Members we account such as either have contracted a certain debility in their very first formation, or being afterward hurt do contract unto themselves a kind of preternatural constitution; or else they are such

*the parts  
receiving*

as Nature her self makes and intends for weak, and so framed and constituted that they may the more easily receive the excrements of other parts: such are the skin, and the parts loose and porous. For Nature (that she might the better preserve the principal and more noble parts from Diseases) hath purposely ordained in mans body some certain parts weak and feeble, that so the principal parts oppressed and burdened with Humors might into them empty whatever is superfluous and burdensome; and these (as we have said) are the skin and glandulous or kernelly parts. And hence it is that the Heart transmits the peccant humors unto the Arm-pits, the Brain sends them behind the Ears, and the Liver thrusts them forth to the Groyns. The parts ready to receive are all those that have any connexion with the part that transmits the humors, and which have the passages through which the humors are conveyed alwaies patent and open; but as for waies whereby to expel and drive them forth, they are either none at all, or otherwise such as are exceeding narrow and over streight; or else lastly, these passages are so situated that they lie directly under the parts transmitting, so that the conveyance of Humors unto them from the abovesaid parts is render'd the more facile and easie.

*the passages by which the humors flow.* As for the waies and passages through which the humors run, they are either such as lie hid, or else such as are open and very manifest. For whereas the whole body is confluite, that is to say, apt and ready to flow together; hence it is that the humors have their fluxion out of one part into another by these occult or hidden passages. So the Whey (as we may term it) being gotten in great abundance into the *Abdomen*, or Cavity of the Belly (commonly called the *Paunch*) by these privy Passages descends into the Guts and the Thighs, and lifts up the said parts even unto a Tumor or swelling; the same which likewise very often happens in other parts. Sometimes the humors assembled together betwixt the Skul and skin of the Head descend thence along under the skin into the inferior parts; but very seldom and rare it is that from hence any tumors are produced. But most an end those humors which excite and raise tumors flow through passages that are patent enough, the Veins and Arteries.

*the differences of tumors whence they are taken.* But that we may briefly come to speak of the differences of Tumors arising from Humors, although very many of these differences are accidental; yet notwithstanding those by which the tumors proceeding from humors are truly and properly distinguished among themselves, are taken from the variety of the containing Cause, or the Humor as an efficient cause producing the Tumor. Now the Humors are divers, Blood, Choler, Flegm, Melanchol-

ly, black Choler, Choler adust, and Whey. From which likewise various sorts of Tumors are excited and caused. And then again, one while the humor exciting the tumor is (as we use to say) simple and sincere, from whence also the tumor proceeding therefrom is said to be a pure tumor; or alsoon again divers humors concur to the making up of one Tumor; and from hence the Tumors which we term *spurious*, (that is, such as are improperly so called) take their Original.

### The Signs Diagnostick:

It is easily known whether the Tumor proceed from the falling down of any part: and if this be not the Cause, we may then safely conclude that the rise of it is from the afflux of humors unto the part affected.

But now whether or no the Tumor takes its beginning from congestion, or rather from fluxion, may by this be discerned; to wit, that those Tumors which are caused by congestion or the storing up of humors, are a longer while and by degrees arriving at their perfection; neither take they up so much room in the part; nor (lastly) was there any the least preceding cause or sign of a defluxion. But now if the tumor be generated from a fluxion, it will be discerned by the presence of the contrary signs. And certainly if so be there were not in the grieved part any foregoing pain or heat, it manifestly shews that the said fluxion is caused by a transmissiion, and not by means of an attraction: like as on the other hand, a preceding pain or heat of the affected part argues the Tumor to proceed from the attraction of humors.

For the Signs whereby to discern and understand the times, take this advertisement; viz. That the beginning of it is then when the part first of all is perceived to be distended and stretch'd forth. The increment or growth, when as the part appears now to be elevated into an indifferent big swelling, and when the Symptoms that accompany all sorts of Tumors are evidently augmented. The state or height of it is, when the swelling and (with it together) all the symptoms are at their highest pitch. The declination is then, when both the bulk of the swelling, and all the symptoms are sensibly diminished.

### The Signs Prognostick.

1. As for the Prognosticks of Tumors in general, take this for an observation; That in reference to the place aggrieved, inward Tumors are alwaies accounted to be more dangerous than those which are external; and as considered of themselves, they have in them more or less danger of death according to the excellency and use of the part affected.

2. By how much the greater the Tumor, as likewise by how much the greater the *intemperies*

or the distemper accompanying it, is; and by how much also the humor exciting the Tumor is more malignant and vicious; with so much the greater danger and difficulty is the Cure thereof to be expected. And on the other side, look by how much the humor generating the Tumor is more mild and benign, so much the less of danger is there in it, and likewise so much the less of difficulty in the curing thereof. But of all the sorts of Tumors, those arising from a windiness are with the greatest facility remedied, as being in a manner discussed and dissipated of its own accord.

3. All Tumors deriving their Pedigree from the humors, unless they make a retreat, and then vanish, either of their own accord, or forced thereunto by Medicaments taken in for Nature's assistance, are usually terminated these four waies (as *Galen* in his B. of an unequal temper informs us) to wit, either by dispersion, which you may likewise call discussion, wrought by insensible transpiration; or else secondly, By suppuration, when as the humor which causeth the swelling is converted into a purulent matter; or else thirdly, By corruption, when as the constitution and the radical heat of the part affected is destroyed and wholly corrupted by the pravity and malignancy of the matter; or else lastly, By induration, when the matter that gives being to the Tumor hath acquired an accidental and adventitious hardness.

The signs of a tumor's resolution.

The signs of the suppuration of a tumor.

Of Resolution an infallible sign is, a lightness in the Member (contrary to its former weight and heaviness) and a cessation of the troublesome beating with which it was formerly disquieted.

The Signs of a neer approaching suppuration are these, viz. a pain and palpitation in the part, together with a Fever, either now invading it, or at least the increase of a Fever already and formerly present; according to that of *Hippocrates* in his second Book, and forty seventh Aphorism, While the peccant and crude matter is under concoction, and until it arrive at a ripeness, and maturation (as we usually term it) Fevers are always present. But so soon as the concoction of the crude or raw matter is compleated, so that the filth and impostumated matter appear, then the part becomes in a manner lighter than it was, the heat abated, diminished, the pain asswaged, and a part of the Tumor is eminently elevated, and begins to grow sharp or sword-pointed; and this sharp point forthwith becomes of a white colour; and the part if touched with the Finger seems softer; and the purulent matter sensibly appears to fluctuate and yield unto the touch of the Hand. Yet notwithstanding it oftentimes changeth, that the filth and corruption lies altogether hid and obscured, so that it may not easily be

discerned, either by reason of the depth of the place, or the thickness of the part; as *Hippocrates* in his sixth Book, Aphorism 41. doth rightly advertise us.

Signs of corruption and induration.

Signs of maturation (which is nothing else but a ripening of crude or raw matter) now nigh at hand, are, a blackness, or a Leaden colour of the part affected. A sign of Induration is, a diminution of the Tumor, but an augmentation of its hardness. A sign of the Tumors retreating and decreasing, is a sudden and unexpected lessening of the swelling; which said diminution if it proceed from an internal cause, is evermore evil; unless the matter retiring be evacuated by a fit and convenient way. Upon the going back of the matter immediately there follows a Fever, if there were none before; or if there were any before, it is now much augmented; and other evil symptoms arise from the retention of the matter in the Body.

Now the best way of freeing the part of any Tumor that grieves and afflicts it, is that which is performed by resolution; and next unto this, that which is wrought by suppuration; but it is very ill, that Tumors or swellings should be hardened; and it is far worse, nay worst of all, that the part it self should be corrupted.

### The Cure.

The nature of a Tumor or swelling in it self simply considered (i. e. as it is magnitude augmented) affords no useful indication at all; but it is taken from the Cause containing; for upon the removal of this, forthwith the swelling vanisheth. If there be a distemper accompanying it, then for the better effecting the Cure, it is expedient in Tumors that are hot, that we use means to cool them; if they be cold, that we heat them; if moist, that by the help of Art we exsiccate and dry them; and lastly, if they be dry, it is requisite that we should moisten them. But then, in this alteration of the parts, their Nature, Temper, Action, Use, Figure, Situation, and Sense (all which prescribe the measure of alteration) are carefully to be considered; of which I have already treated at large elsewhere, in my Institutions, the fifth Book, second part, second Section, and first Chapter.

The Causes of a tumor how to be taken away

In the removal of the Cause, we must heedfully look whether the Tumor be already compleated, and not like to receive any further increase or addition; or otherwise whether it may not be further augmented. For if the Tumor be already arrived at its perfection, then there is no more required but that we look back unto the containing Cause, and then that we take the best course to remove it. But if the Tumor be not already at the height, but only in a tendency there-



unto; we must then also look back a little further unto the Antecedent Cause, as likewise the Causes more remote, and chose al of them we ought speedily to remove. And this is especially to be done whenas the Tumor is generated from an afflux of humors. For in this kind of Tumor the fluxion itself is to be opposed, and if possible, all its Causes to be taken away. Now the Fluxion may be totally removed, if the flowing humor be either evacuated by drawing of Blood, or by Purgation; or if the course of the flowing humor be turned another way; which is effected either by drawing it back unto the contrary parts, or by intercepting the motion of the humors in their passages or by repulsing of them from the part affected; or lastly, by deriving of them unto the parts adjacent.

*A Fluxion, how it may be taken away.* Now the Causes of a Fluxion are taken away, if we take away all such things as conduce unto either the transmission, or the attraction of humors; for in one of these two waies a Fluxion is both begun and carried on. The aforesaid transmission is caused, or at least much furthered, when either the whole, or some part stirred up and provoked either by the over great abundance, or by the quality of the humors, or by both together, drives forth what is burdensome unto it unto some other part that is weaker, and thereupon the more proclive and apt to receive. And therefore whatsoever is oppressive either of the whole, or of any particular part, it behoves us to discharge and remove it, by opening a Vein, or by purging, or both waies; and then to corroborate both the part which breeds, and the part likewise that collects and receives these vicious humors; that so we may hereby free them of all their Obstructions. Attraction is caused by reason of Pain, or Heat; and therefore it is mainly requisite that the pain be removed, and the heat qualified by refrigerating Medicaments. But if the matter of the Tumor or Swelling be gradually and by little & little heaped up, then the Cause of this congestion (whether it be a distemper, or any other fault in the part) is to be removed. All which shal hereafter in the peculiar Tract of Tumors be made more manifest.

*A Humor how to be taken away out of a tumor.*

As for so much of the Tumor as is already caused, it is to be annihilated by freeing the part affected from that very humor which excites the Tumor. Now the humor is taken away out of the affected part, either by translating of it unto some other part, or by the evacuating of it out of the Body. It is transferred into some other part, either by astringents and Medicines that drive back, or else by Medicaments constringent, that is, such as by compression bring the part close together; or otherwise by drawing of it unto other parts, which is effected by the sense of pain, by heat, and by reason of a vacuity or

*A Humor, how to be driven back.*

empriness. Such things as repell and drive back (as elsewhere hath been said) take place only where the matter is not as yet impacted and stuffed into the substance of the part, but only flows to and again in the greater or less Vessels of the same, or else without these Vessels in the vacant spaces of the part; and which is neither so thick, nor yet so thin, that it can resist the repelling Medicines. But if the matter be already far'd into the part, that it is now neither possible nor safe to repell and drive it back from thence (of which we have spoken in the fifth Book of our Institutions, Part 1. Section 1. Chap. 8.) then in this case, repulsion hath no place, neither is it to be attempted. The peccant matter is evacuated out of the Body, either sensibly, to wit, when it is even sensibly poured forth of the parts, or else insensibly, when the matter is dissipated by the Pores.

*Discussion of Humors.*

If there be no great store of matter, and the part situated above it be less compact, and the matter itself not so extraordinarily thick, then it is to be expelled by insensible discussion. But then notwithstanding if the matter to be scattered be any thing hard, it is fit of all to be softened, that so it may the more easily be discussed by the pores of the Skin. But then again on the other side, if the matter contained in the Tumor be in greater abundance, and withal thick; and if the part lying above it be close and compact, the matter is then rather to be sensibly evacuated by opening the Tumor.

But since that all these things are most conspicuous in inflammations, therefore whatever may here seem fit and requisite to be spoken in general touching the original of Tumors proceeding from the afflux of humors, we wil hereafter treat of in the Cure of an Inflammation: and at present we wil here (as in the fittest place) speak something in general of Impostumes.

### Chap. 3. Of Impostumes.

For oft-times it comes to pass, that the matter which is cause of the Tumor cannot be insensibly dispersed, but that it wil rather admit of a change into some other kind of matter, and so be heaped up in a peculiar place. The which although it most an end happen in Inflammations, yet notwithstanding other Tumors also (and chose not a few) in process of time are turned into Apostems, or Impostumes as we term them. For albeit corrupt matter proceed only from Blood, as we shal further shew in the fifth Chapter; when we come to speak of an Inflammation; yet notwithstanding, if in like manner also (in other Tumors) the matter which causeth the Inflammation may not insensibly be dissipated, Nature that is never idle (especially when assisted by the warmth of Medicaments, and most of al if any portion of Blood be therewith mingled) in process of time converts it (and that very variously according to the nature of the humor) into something like

like unto matter; which when it is altogether severed from the parts containing, and gotten together into the Cavity of the part affected, is properly called an Apoftem; as hath already been said in

the beginning of the first Chapter. And in truth the name of an Apoftem and Impoftume is commonly made use of for every kind of Tumor; but unfitly as is above said, Chapter first. For an Apoftem and *Abscessus* or impoftumation hath its denomination from parting asunder, in regard that the containing parts which before touched one the other are now mutually departed asunder, and form a certain Cavity, into which the corruption betakes it self; and likewise an *Abscessus* or Impoftume is the collection of the filth and purulent matter in the hollowness of any part whatsoever. Pliny gives to Apoftems the term of suppurations, in his twentieth Book, and third Chapter; Avicenna calls them *Dubellet* or *Aldubellet*.

Tumors some of them more speedily, others again more slowly attain unto their maturation or ripeness. Those that proceed from good Blood, and especially in a fleshy part, are easily and soon matured: but those Tumors which are bred out of other humors, and have their residence near unto the Joynts, and in the sinewy parts, those especially that are weak and have in them but very little native heat, are with far more difficulty brought unto a maturation. Now of the matter which is gathered together in an Apoftem, there is great variety according to that of the humors. Out of good Blood is generated a filth that is less offensive; but out of the other humors is bred something that resembles matter, Green, Yellow, or some other color, Pricking, and Sinking. For as for this preternatural matter, if it may not be driven forth, Nature then separates it from the parts containing; and thus being severed from the other parts, Nature collects it into one place, and there digests it so far forth as the nature of the subject matter doth admit.

And indeed of the matter that is discovered in Impoftumes there is evermore great variety. For there is not only that which we call *Pus*, i. e. a stinking Corrupt matter found therein, but likewise now and then a substance resembling Gruell, Honey, Suet, the Lees of Wine, the Dregs of Oyl; and sometimes also never a whit unlike unto Honey and Snivel blended together; and that oftentimes of so ill a favor, that no one is able to abide the Srench: and as soon again also we may therein discern substances like unto Hairs, Nails, Bones, Stones, Worms, Wood, Coals, Cockleshells, as before also (in the beginning of the second Chapter) we have acquainted you. Yea

moreover also in Impoftumes not unually there are found Worms alive, and other such like little Creatures that have life: and *Philoxenus* writes (as *Actius* reports, *Tetrab. 4. Serm. 3. Chapter 7.*) that on a time he discovered in a Tumor opened living Creatures like unto Gnats, or small Flies. And it is a well-known truth, that the humors in the Body may be wholly changed and converted into Worms, and such like substances in great variety. But then if Coals, Woods, Shells or any thing else of a like nature (into which the humors cannot possibly be conceived to pass) and more especially when they resemble any thing that is feasible by Art) shall chance to be found in Tumors, then without doubt we ought to ascribe it unto Sorcery and Witchcraft. And this likewise (as touching the difference of Impoftumes) is to be taken notice of (the same that *Galen* tells us in his fourteenth Book of the Method of Physick, and twelfth Chapter) viz. that the matter into which the humor causing the Tumor is converted, one while flows to and again in the Cavity of the Tumor, and is gotten together into the nook thereof; and as soon again it is shut up in its own peculiar Membrane, as it shall further be made to appear when we come to treat of the Tumors we call *Meliceries*, *Atheroma*, and *Steatoma*. Albeit there have not been wanting some (as we may read in *Paulus Aegineta* in his sixth Book, and Chap. 36.) who were of Opinion, that those Tumors alone were to be properly termed Impoftumes, that did participate of an Inflammation and Pain, and had within them a sharp and corroding humor; and were not at all contained in their own peculiar little Skin or Tunicle.

### The Signs Diagnostick.

Now then in an Inflammation it may easily be discerned when the humor that causeth the Tumor is turn'd into a purulent matter. In other Tumors notwithstanding there are Signs given which may demonstrate whether or no they be changed

into an Impoftume. As to instance, Until that the Tumor be turned into an Impoftume, it is never a whit lessened, but there is perceived a more intense bearing in the part, the Heat, Pain, and the other symptoms are heightened; hence it is that *Hippocrates* in the second of his Aphorisms, Aphor. 47. writes, that till the time of maturation the Pains and Feavers are intense. And besides some one part or other of the Tumor begins to be sharp-pointed, the matter then seeking its passage forth and thereby lifting up the part into a Tumor.

But so soon as the humor is converted into Snot or that kind of matter which much resembles it, then, and not till then, there is an abatement of the Fever and pain, and then the swelling round about is something diminished, the extension

tenfion and hardnefs a little remitted, and the Patient is fenfible of eafe and a kind of lightfomnefs; for then in Tumors that are hot the heat is abated and becomes remifs whenas the matter is al gotten together into fome one part: and hereupon the tumor it felf in that part where the matter is thus collected is raifed up into a fharp point. And at length, if the place be preffed down with the finger, there is a loofnefs and a certain kind of floting of the matter underneath fenfibly perceived in the part. Yet notwithstanding that we be not miftaken in this point, a Caution is very requifite. For now and then there is no fluctuation at all to be perceived, to wit, when either the matter is over thick, or otherwife when it is fituated in a part very deep. Concerning which Hippocrates thus inftitutes us, in the fixth Book of his Aphorifms, Aphor. 41. when he faith, That for thofe which have a fuppuration in the body really exiftent and in being, which yet notwithstanding appears not unto them, the reafon why it lieth undiscovered unto them is in regard of the thicknefs either of the matter, or of the place where it hath its refidence. But fometimes there is perceived to be fomewhat like unto this fluctuation or floting, albeit there be no filth or corrupt matter underneath; which happeneth about the Knees, and other joynts, where there is no flefh underneath the skin.

### The Indications and Cure.

Whilft that the purulent matter (by the late Latine Authors termed *Pus*, from the reſemblance it hath unto Snor, or Snivel) is in the way of maturation, and until it hath perfectly attained thereunto, the heat of the part that concocts the aforeſaid *Pus* or purulent matter muſt be augmented by Medicaments that cheriſh and encreate the heat of the part; or elſe by ſuch Physical Remedies as are proper, to wit, thoſe that tend unto ſuppuration; and by this means the production of purulency is to be holpen forward and haſtened, and the preſent intenſe pain appeaſed. But ſo ſoon as this *Pus* or ſomewhat like therein is perfectly generated in the part, in regard that it is in its whol kind univerſally preternatural, and ſo cannot poſſibly be aſſimilated by the part, it muſt thereupon be caſt out of the body; which may moſt aptly be accompliſhed by opening the Impoſtume, whether it break of its own accord, or otherwiſe it be opened by art. But ſeldom or never is the matter contained in the Impoſtume to be diſcuſſed and diſſipated; and then it ought to be only when the matter is very thin and fluid.

*Matter  
vulgarly  
termed Pus,  
how to be  
ſurbered.*

Thoſe Remedies that not only mitigate, but wholly alſo take away from the part all ſenſe of pain, are ſuch as we call *Anodyna*, and *Chalaſtica*, viz. Milk, Butter, Oyl, Swines Fat, Capons Greafe, the Unguent Dial-

*thea*, and the Emplaſter *Diacbylon ſimplex*.

What the Nature of thoſe Medicaments which both cauſe and haſten maturation, or the ripening of this *Pus*, is, we have declared in the fifth Book of our Inſtitutions, Part 1. Sect. 1. Chap. 9. Such as are theſe, Oyl mingled with Water, Oyl temperate, without mixture, Wheaten flower, and Bread of the ſame, the Fat of a Calf, Swines Fat, Hens Greafe, the Fat of a Goose, Pitch, Roſin, Wax kneaded and mingled with Oyl, the Unguent named *Tetrapharmacum*, that is, made up of four Remedies, viz. Wax, Roſin, Pitch, and Fat. In Bodies that are ſoft and looſe, the fat of Swine; but in bodies more compact Bulls fat is moſt approved for uſe. For this is carefully to be heeded in Maturationes, i. e. Ripening Medicaments, that they ought to have in them the neereſt reſemblance that poſſibly may be unto the nature of that body whereunto they are applied. And therefore in Children, Women, and generally in all bodies that are ſofter than ordinary, the moiſter kind of Remedies take place; and on the other hand, in bodies more hard and cloſe, Remedies of the moiſter ſort are required. And this in like manner is to be underſtood touching the Nature of a tumor or ſwelling. As to inſtance, in Inflammations ſuch Remedies as moderately heat and moiſten (provided alwaies, as I ſaid, that they be temperate) are uſed with the beſt ſucceſs. And yet notwithstanding, becauſe that in ſome other Tumors naturally more cold there is a maturation, though more ſlow; and the matter of them being thicker than ordinary, it it be not converted into a laudable *Pus* or Quittier, yet it is turned into a matter neer of kin thereto; and the heat of the part altho' it be greatly furthered and carried on by temperate Maturationes, yet can it not ripen the cold matter; upon theſe aforeſaid conſiderations, Medicaments that are experienced to be ſomething hotter are to be added unto the former. The ſame is likewiſe to be obſerved in parts naturally cold, as alſo in old age.

And hence it is that of ſuch Remedies which ripen the crude matter in Tumors, we conſtitute two kinds. Of the former ſort are all thoſe that are moderately hot and clammy, which are of uſe in hot Tumors; and theſe are properly ſuch as are ſaid to further and haſten Maturation; of which ſort are thoſe before recited, *Hydrelcum*, ſweet Oyl, Wheaten Meal and Flour, Milk, the Pith of white Bread, the Fat of Swine, freſh Butter, Wax mingled with a double quantity of Oyl, Mallows, and Marſh-mallows decocted with Oyl, the Mucilage of Linfeed, of Fenugreek, of Mallows, and of Marſh-mallows. If any deſire a Compoſition, let him make ſuch an one as this that followeth:

*The Differences of Maturationes.*

Take of the powder of the Root of Marſh-mallows, the Leaves of Mallows, of each one ounce; of Wheat flour an ounce and half; of the ſeed of Fenugreek



*Fenugreek, and Linseed, of each half an ounce; of Saffron half a dram; boyl them in the Decoction of dried Figs, or in Milk; add hereunto of the Fat of Swine, and the Unguent Diakthea, of each one ounce; and make herewith a Cataplasma.*

Of the second sort are such as are somewhat hotter; which are to be used in cold Tumors, and in colder Natures, because there the parts likewise are colder; and such are, Turpentine, the Gum of the Fir-tree, the Larix-tree, and the Pine-tree, dried Figs, Raisins, Fenugreek seed, Linseed, Onions roasted under cinbers, Leaven, Oyl of Chamomil, and Oyl of white Lillies, the Fat of an old Hen, old Butter, Bdellium, Galbanum, and Ammoniacum.

Out of which such a like Cataplasma as this may be made:

*Take of the powder of the Roots of Marsh-mallows, Wheat flour, Linseed, Fenugreek seed, dry figs pounded to a Mash, of each two ounces; of Leaven half an ounce; of the powder of Chamomile flowers two drams; let them boyl in a sufficient quantity of Water; then add thereunto of the Fat of an old Hen, and Oyl of Camomile, of each an ounce and half, and so make up a Cataplasma. Or,*

*Take the Leaves of Marsh-mallows, the roots of white Lillies, Holy-hock Roots, of each an ounce and an half; Onions one ounce; boyl them to a softness, then mash them and pass them through a hair sieve. Add hereto of Wheat flour, Linseed, Leaven, of each one ounce; Turpentine half an ounce; of Saffron half a dram; Oyl of Camomile, and Hens fat, of each a sufficient quantity; and so make a Cataplasma.*

The most usual are, the Emplaster of Melilot; and Diachylon magnum, with Gums.

*The Evacuation of stinking and corrupt matter.*

When as the corrupt stinking matter is arrived at its full ripeness, or the matter of the Tumor is changed into an humor resembling this Pus so often mentioned, it is then to be evacuated, and cast out of the Body; the which since it may be effected in a twofold manner, either sensibly, or by an insensible digestion; the best course were (more especially in the face, lest that a Cicatrix or scar should ensue and remain upon the opening of the Tumor impostumated) to discuss and scatter abroad the matter by an insensible transpiration; for which very purpose certain Medicaments are described by *Galen* in his sixth Book of the composition of Medicines of the second rank, the 14, 15, and 16. chapters; and there you may see them. But it is not often that this happens; and when it doth, there is cause to fear, lest that if there be great store of corrupt matter, some part thereof should be left remaining and hardened; or that if the filth aforesaid be acrimonious and corroding, that then it may be rendered more sharp by delay, and the

application of Remedies that are hot; and so by this means the part affected, as also the parts neer adjoining should be greatly hurt and injured; and therefore for the most part the safest way is to open the Apostem, if it chance not in a convenient time to be opened of its own accord.

*The opening of Apostems.*

Now then an Impostume is to be opened in the highest and most eminent place, where the skin usually is at the thinnest; but then notwithstanding the incision must be in that place of the part affected which is most sloping, that so the passage forth of the corruption may be rendered the more facile and easie. Now the opening thereof is effected either by some Caustick Medicament, or else by the help of an Iron incision knife. But most an end the safest way is to open the impostume with an Iron Instrument rather than by a Caustick Medicament. For Medicines most commonly protract and delay the Cure, excite and cause both heat and pain in the part; whereupon it happeneth that the temper and constitution of the part, which was before much weakened by the Disease, becomes now wholly subverted; and from hence dangerous symptoms do frequently shew themselves. Now and then notwithstanding, as for instance, in the watery Tumor of the Testicles, when with the Iron we cannot easily penetrate unto the bottom of the place wherein the vicious matter is contained, we ought to use a potential Cautery. For the way being once opened by a potential Cautery may afterward be dilated as much as we see cause for; that so the Instrument may the better pierce the part, and reach even unto the deepest place, and bottom thereof.

The said operation with an Iron is effected whenas the opening is made by an Iron Instrument made red hot, or else with an Iron Incision knife that hath not been heated in the fire. We very seldom make use of the hot Iron,

*How many waies a tumor may be opened.*

and then never but in cold tumors; and that also only whilst the impostume is in those parts that have in them either many, or else large Veins and Arteries; that so the flux of Blood (which we call the Hemorrhage) may the better be pre-cautioned and prevented. But as for the Incision Iron that hath not been heated, we use it most frequently, and that with very good success. But if it shall so happen, that upon the opening of the Impostume, sometimes pain, and sometimes an efflux of blood shall ensue; and likewise that by reason of the abundant evacuation of the matter; or else that by pain and fear, a sinking away or swooning should follow; in this case we must endeavor that the Section may be performed with the greatest speed, and the least pain that possibly may be. If an Hemorrhage be feared, we must have in readiness those Medicaments that stop the flux of Blood,

Blood, as Frankincense, Aloes, the white of an Egg, Bole Armenick, Pomegranate flowers, Dragons blood, and the like. To prevent fainting and swooning, especially in Children, Women, and other fearful persons, we ought to have at hand such Medicaments as are in use against this faintness of mind. As also that there may be a right and

*The opening of a Tumor in what manner to be performed.*

orderly proceeding in the Section or opening, the condition of the part, the situation of the Veins, Arteries, and Nerves, as likewise the Nature of the Muscles, all these ought to be exactly known and learned by the

Chirurgeon from what is written by Anatomists; lest otherwise Veins and Arteries should be cut, and an Hemorrhage thereby caused; or that pain should arise from this hurting and cutting of the Nerves; or that hereby the Member should be altogether deprived of sense; or lastly, that by the hurting of the Muscles the part should be wholly deprived of its motion. Moreover also, a special regard must be had unto the fibres in the Muscles, so that the Section ought to be performed according to the conduct of these fibres, that is to say, not obliquely or overthwartly; for this kind of Section will greatly annoy the action of the part. We must again heedfully weigh and consider, in what measure, and how great the Section ought to be. For if it be over little, the Pus or corrupt matter, especially if it be thick and cloddy, will have no passage forth without compression of the part, which will both assuredly excite pain, and beget a kind of brawny hardness in the part, which may be the cause of a Fistula. And on the other side, if the section be made overgreat and wide, there will then be left remaining a great and unsightly scar; and which is worse, the ambient Air getting in will alter the part: and therefore the Section ought to be made in such a manner and measure, as shall be most requisite for the evacuation of the Corruption and filth. And although the section be somewhat with the least, it may notwithstanding very easily be dilated by thrusting a rens into the hole thereof. To make the Incision we admit of either the Razor, or the Knife of Myrtle wood edged on both sides, with which the Italians and French open Veins; or else that Knife which we call *Plebotomus*, which the Germans use; or lastly, that which we call *Syringotomus*, an Instrument crooked, and of use only in the incision of an internal, or a concave body.

*The evacuation of the Pus, or corrupt matter*

The incision being made, if there be but little filth, the part is with the finger to be pressed down, to the end that it may the more readily flow forth: but if there be great store of this filth and matter, it is then to be drawn forth leisurely, and by little at a time, lest haply (if it should be evacuated all together, suddenly, and on an heap as it were) much of the spirits should

therewithal exhale, and thereupon a fainting and swooning should ensue.

After Incision, and the emptying forth of the corruption, it will be convenient the first day to strow thereon the dust of Frankincense; on the second day to lay thereon some kind of Digestive or other, that so if any thing yet remain undigested, the compleat digestion thereof may hereby be accomplished. And if there be present any filth, or any kind of uncleanness which may hinder the growth of flesh shall chance to occur, they are forthwith to be wiped and cleaned away. As for example:

Take Turpentine one ounce; Honey of Roses half an ounce; and of Barley Meal as much as is requisite, and so make a mixture, and use it for the purpose aforesaid.

If the Ulcer require yet a more forcible cleansing by reason of us extraordinary nastiness, then we ought to use the stronger Abstersives, as *Unguentum Apostolorum*, &c. And at length Sarcoticks, that is, such Medicaments as cause flesh to breed and grow, are wisely to be applied; and the orifice of the Ulcer to be shut up with a scar.

Here we are to take notice, That sometimes Impostumes may for a long space lie hid not only underneath the external Muscles, but likewise under the more profound, yea, and the more internal Muscles also. Concerning the Impostumes of the Muscles of the lower belly or Paunch, we have already spoken in the third Book, Part 10. Chap. 7. As touching the Impostumes in the great Muscle *Psoa*, *Gulielmus Fabricius* in his first Century, and sixty third Observation, relates two Histories: And first he tells us, that a certain Matron took her bed, complaining of acute and extreame pains about her Loyns, which was accompanied with a Fever, swooning fits, and difficulty of making water. And when it was sufficiently understood by the kind of the pain, and other signs and tokens, to be an inward Impostume (for outwardly there appeared not any thing, neither could there any thing be discerned by the touch) and that this Apoplex could be no where but under the *Psoa* Muscle; and when that the sick party was foretold the extreame danger and hazard of her life, unless the Impostume were opened, and the humor caused to flow forth; both her self and her friends gave their consent, that on one side of the *Spina dorsa*, or back-bone, the skin and the exterior Muscles even unto the *Psoa* Muscle should be opened by an Incision with a Razor: which was done accordingly, and out there flows a purulent and stinking humor, and so, after that some certain cleansing and absterive Medicaments had been for some few months applied, she became perfectly recovered. The other History which he relates, is this: In the Year One thousand five hundred

*Of Impostumes lying hid, two histories.*

hundred eighty five, a certain yong man, aged twenty seven years, or thereabouts, as he was descending from the highest pitch of the Mountain *Cinecius* unto the lowest part thereof, not well minding his footsteps in a very steep path, he or ever he was aware fel or rather tumbled down backwards; and that which added unto the mischief of the fall, was this, the hilt of his Sword lighting under the short Ribs and the left Kidney exceedingly crushed and bruised his Loyns. After this his fall, for a few daies at the first, the pains he felt were not many; not long after he grew sensible of pains in the left part of his Loyns, but they were as yet very gentle and remits: now from hence forward these never left him, until at length by an insensible and gradual growth they arrived at the height of their increment, insomuch that at length they became extreemly sharp and intolerable. Upon this immediately follows the loss of sleep and appetite; whenas notwithstanding at that very instant the sick party was not afflicted with any great thirst, or very violent Fever. Neither was the part affected ever a while discolored, or as we say, black and blue: nor did there at al any outward swelling appear, nor wasthere the least imaginable external blemish any where to be seen; but al the parts seemed to be, and indeed were what they seemed, plain and even, and in no point at al altered from their natural scituation or color. But as afterward the event it self plainly evidenced, abundance of humors from all parts of the body had met together in the Muscle *Psoa*. In the first place he was by a certain Physician tampered withal as a Nephritick Person, that is, one troubled with the pains of his Reins; but the Doctor was much mistaken. For at length whenas no one sign of the aforesaid Nephritick effect appeared; and the sick party had not received the least benefit by what had been prescribed; he was in the next place sent unto *Johannes Griffonius*; who instantly discovered the whol gnet, and the mischief that it threatened; all which he very wel knew; and likewise the danger impending from the shutting up of the noysom purulent matter in the inwards, he foretold the yong man; and that his Opinion was, is ought to be evacuated. Unto whose will the yong man giving his consent, commits himself unto the Cure. What doth this expert *Griffonius* hereupon? In the first place he takes care, that the matter which had now seized upon, and did possess the whol Region of the Loyns, should all of it be drawn together into some one place thereof (by the applications of those Medicaments which had a vertue in them powerfully to attract from on high) to wit, such a place, where the principal Vessels were but few, and where the Instruments of motion might least be harmed amidst their operation. Which his design when (ever and anon attempting the part with a Silver

Probe) he wel perceived by the sense of pain attending it, that he had successfully accomplished, without any more ado he lanceth on the left side the flesh nigh unto the fourth Vertebra of the Loyns, with a fire-hot Razor, making a Wound as deep and long as is the fore finger from the end thereof unto the hollow of the hand; as afterward it was easie for him to conjecture by that long sharp tent which he put thereinto. And moreover, when he had conveyed down two of his fingers into that same Wound (to the end he might widen the passage forth) out there issueth great store of matter and stinking stuff. And then having prescribed the manner of evacuation according to the rules of Art, the Chirurgion ordains for the Patient a sharp tent made of Silver, the which being first dipt in cleansing and absterfive Unguents, he enjoyed him to use for some months. So that by this means the lips of the Wound came close together of their own accord; and the yong man recovered his former perfect health.

And this is likewise as a thing remarkable to be taken notice of, That Impostumes lying concealed in some places, if they be not opened, then they sometimes seek out another passage, and thereby flow forth unto some other place. And so the afore mentioned *Gulielmus Fabricius*, in his first Century, and 81. Observat. relates of a child three months old, that was sorely afflicted with an Impostume neer unto his right shoulder. But the Parents would by no persuasions be wrought upon to admitt of an Incision; so that by degrees the Tumor seemed much lessened and abated. But at length it being opened, some smal and inconsiderable quantity of matter issued forth, and the Tumor by little and little became in a short space wholly extinct, and sunk away; the humor now and then a little at a time gliding downwards into the lower belly, and the generals; by which the radical Native heat being destroyed, a Gangrene follows thereupon, and after a few daies a *Sphacelus*, and in a very short time death demands his due.

And this may suffice to have been spoken concerning Tumors in general arising from the humors. Now we wil take a view of them particularly and in their severall species or kinds. Now in the first place, those Tumors that take their rise and original from the Blood present themselves unto our consideration; and among them, we shall first speak to that kind of Tumor which we call *Corpulencia nimia*, or extreame corpulency.

#### Chap. 4. Of extreame Corpulency, or overmuch fleshiness.

**T**Ruth it is, that *Galen* in his Book of Tumors, Chap. 1. affirmeth, that Fat and Corpulency

*The humor that flows out of an Impostume sometimes translateth into other parts.*



lent men are ſaid to be ſuch as have a Bulk and vaſtneſſ, not ſuch as is altogether preternatural, that is, beſide, above, or beyond Nature's intention (much leſſ contrary unto it) but ſuch as may be ſaid to be not Natural, and above that which is according to Nature. Yet notwithstanding in the very ſame place he immediately adds, that the exceſſes of diſpoſitions which are not by Nature are therefore beſides Nature; and that (in very truth) the hurrying of the actions doth terminate the exceſſes of ſuch as are corpulent. And therefore, ſince that the Bulk of the Body doth now and then ſtrain unto ſo extraordinary a vaſtneſſ, that Nature's operations are thereby much impeded and hurt, he doth upon very good grounds (in his Book of the differences of Diſeaſes, the ninth Chapter) reduce extream corpulency, or overmuch Fleſhineſſ, unto the Diſeaſes of magnitude augmented. For the ſame *Galen* in the place alleadged, viz. Chap. 9. of his Book of the differences of Diſeaſes, reports of a certain man, one *Nicomachus* of *Smyna*; that his Body grew to ſo huge and extraordinary a bulk, that he could not ſtir from one place unto another. And within our remembrance alſo, by the Pictures brought hither and here expoſed unto publick view, a certain Rope-makers Wife of *Strasburg* (a City of *Alſatia*) became very well known; who in the year 1613. and of her own age the 36<sup>th</sup> weighed four hundred and eighty pounds. And I my ſelf of late daies ſaw here a man who weighed more than four hundred pound; yet notwithstanding this man appeared in publick; and to tell you the whol truth, in this Perſon Nature began to aſſay ſome certain kind of evacuation of the ſerous or wheyie humor by the Navel. And the very ſame hath been found to happen unto others alſo, in whom the Body hath attained unto ſo immenſe a bigneſſ, that they could neither move, nor yet ſo much as breathe freely. But now in ſuch like Perſons as theſe, there is not an equal augmentation of all the parts of the Body. (as it is in them who grow, and are naturally enlarged) but only of their Fleſh, and of their Fat, there is an exceſſive and over-great encrease.

### The Cauſes.

The conjunct Cauſe therefore of this Tumor of the whole Body is the Fleſh and the Fat. And here truly one while the Fleſh, and otherwhile the Fat is augmented; and ſometimes they are both alike encreaſed. But the Antecedent Cauſe is the over-great abundance of Fat and good Blood. And for this cauſe it is, that this Tumor is referred unto Tumors proceeding from the Blood. And yet notwithstanding the Reaſon of theſe is far differing from that of other Tumors ariſing from the Blood. For the containing Cauſe of bloody Tumors is the Blood, but the containing Cauſe of this Tumor is the Fat, and Fleſh; and the antecedent Cauſe is the Blood. The reſt

of the bloody Tumors that are properly ſo called ſpring from the Blood iſſuing out of the Veins or Veſſels into ſome other places; which never happeneth in this extream and extraordinary corpulency, in the which Blood is never known to fall or iſſue forth into other places, but it is evermore put unto the Body.

But now what the Cauſes may be that much Fleſh and Fat ſhould be generated, will eaſily and ſoon be diſcovered, if we well conſider the Cauſes of breeding Fleſh and Fat. Now then Fleſh is abundantly bred in thoſe whom we call *Eufarſcos*; that is, Perſons of a pure, ſuſtained, and ſound Fleſh; yet alwaies provided, that the material cauſe of Fleſh, to wit, nourishing Food, be not wanting; and likewise that the native virtue generating Fleſh be as it ought to be, vigorous and active. That which adminiſters matter towards the breeding of fleſh is great abundance of good blood, the which to produce and generate, means of a good and plentiful juyce, and alſo a due and right temper of the Liver, to wit, hot and moiſt, are evermore requiſite. But now again that much Fleſh may be bred from much Blood, is requiſed that there be a ſound and healthful habit of Body, and a good temperament of the muſculous parts in the Body; which ſaid temperament is likewise hot and moiſt. Hereunto alſo (as we are to underſtand) very much conduceth an eaſie or idle kind of life, in the which there is not much Blood waſted; as alſo the ſuppreſſion of their accuſtomed bleeding, and evacuations of Blood; eſpecially in Women. As touching the original and increment of Fat, many and various are the Opinions and controverſies among the Phyſicians at this very day; the which for me in this place to examin were altogether impertinent. And therefore in a word we ſay, that Fat is generated from the Oily and fatniſh part of the Blood, falling from out of the Veins and Arteries into the membranous parts, and there digeſted by the innate virtue and temperate heat of the Membranes. That great ſtore of Fat ſhould be bred, in the firſt place, the Liver is a principal cauſe thereof. For if by reaſon of its excellent and perfect temperament it doth not generate either much earthy and cold, nor much cholerick and hot juyce, but produce a ſweet fat, and oily Blood, and fill the Veins and Arteries therewith; and if this Blood be not conſumed or waſted in the habit of the Body, but that it ſtil continue to be more cool and moiſt, then this Blood is there converted into Fat. Eaſe likewise, and the intermiſſion of Exerciſe, the retention of accuſtomed evacuations, alimons temperately hot and moiſt; and generally all things which either outwardly or inwardly any waies conduce to the making up of a plentiful and temperate maſs of Blood; or that have in them an efficacy in qualifying and allaying the over-intenſe heat of the Blood of the Entrails, and of the habit of the Body. Hence it is that *Galen* hath

bath left it upon record; that all Bodies tending towards a cold and moist temperament become Fat. And with this of *Galen* agreeth what *Prosper Alpinus* in his Book of the Egyptian Physicians, Chap. 9. hath written; his words are these, The Bodies of the Egyptians (saith he) are hot and dry, in regard that they live under the hottest (and withall dry) position of the Heavens: but because they moderate and lessen this heat and driness by their daily drinking of water, by their continual use of meats that have in them a cooling virtue, and likewise by their frequent use of Baths which they make for themselves with sweet Water; their bodies hereupon become extraordinarily fat, so fat, that he never beheld in any part of the world in to great a number and generally such extream fat and gross Persons as he saw at *Grand Cayre* in *Egypt*. For he reports that very many of them are to exceeding gross and corpulent, and generally so fat in their Breasts, that they have Paps of a far larger size, and thicker than the greatest that ever he had observed in any Woman. Other things there are which demonstrate unto us the truth of this affection, to wit, that a hot temperament of the Liver makes very much for the breeding and augmenting of fat. For I my self knew a Person of Honor, who after he had been sick, and was recovered of a malignant Fever, grew to be so extreamly fat and gross, that he could very hardly move, or stir himself in any place where he sat; and as for the bulk of his body, he came never a whit behind him whom we have formerly mentioned.

### Signs Diagnostick.

1. As concerning Corpulency therefore, it is sufficiently obvious to every mans Eye. But then, whether or no it only produce some kind of deformity and be no more then a Symptom; or else whether it be not to be accounted a Disease or preternatural affect, the hurt and offended actions will evidence unto us; of which we will now speak.

### Prognosticks.

1. What the inconveniencies and discommodities are that this over-great fleshiness or (as we term it) extream Corpulency carries along with it, I shal give you an account thereof in the words of *Avicen* that expert Arabian Physician. For thus he, in his fourth Book, Part 7. Tract. 4. Chap. 5. Superfluous fat (saith he) is that which hinders the body from and in its motion, walking and operation; and streightning the Veins with an undue and dangerous constriction: whereupon it oppilates and stops up the passages of the Spirit, so that hereby it is many times extinguished; and for the same reason likewise it is that such Persons have no refreshment from the breathings in the ambient Air, which finding the passages obstructed, proceeds not so far as the *Præcordia* (or Entrails) to moderate and qualifie

their excessive heat: and they are in continual fear, lest that their Blood should again be driven forth unto the streightned place. Whereupon haply they will give way that a Vein be suddenly opened, which may prove very pernicious unto them. And truly in this kind of disposition there happeneth unto them an extream & dangerous constriction or streightning of their breathing, & a beating of the Heart. Hereupon they are evermore exposed to a sudden death; and especially those of them that are fatted in their younger daies; for these have alwaies their Veins very small, and much streightned. And they are likewise exposed unto the Apoplexy, and Palsie, and throbbing of the Heart, and the Flux *Diarrhea*, by reason of their humidity; they are also subject to fainting and swooning fits, and the worst sorts of Fevers; neither can they away with fasting or thirst, by reason of the constriction of the passages of breath, the vehemency of the cold of their complexion, their small store of Blood, and the abundance of their Phlegm. And to this moreover may be added, that they are (whether they be Men or Women) issueless and barren; the Male being not able to Generate, nor the Female to produce the Embryo in the Womb. As also their Seed is little or none at all (to wit) because it is concocted, through the imbecility of the heart; although there may be store of Seed in regard of their humidity or moisture; yet notwithstanding such as is waterish, and (in *Galen*s judgment) thin, and unmeet for Generation; or if it be generative, it is of Females only. And the like may be said of Women, that those of them which are fat, do not conceive, or if they do now and then conceive, they forthwith miscarry; and lastly, their appetite (to wit that which is natural) is exceeding weak. Thus far *Avicen*.

2. The truth is, that the Cure of this affect may be hoped for; but it is wont to proceed but very slowly; neither is it to be compleated in a short time, and it is mainly requisite hereunto that the Patient be, as we say, morigerous, and in all points ready and willing to submit.

### The Cure.

The Cure of this Tumor consists in the removal of the Cause which is an over-great store of Flesh and Fat. Now this abundant flesh and fat is taken away, by wasting and annihilating what is already generated, and then by taking a course that it may not again be multiplied: and this may be done, if we take care that too great an abundance of Blood be not bred; or that which is already in the Body, that it be by degrees wasted and lessened. Both these intentions are accomplished by those things that heat, and exsiccate, or dry much. For whereas the Liver, if it hath a gentle, remiss, and temperate heat, generates great plenty

plenty of sweet and Oily blood, and so continually foment matter for the breeding of much fat and store of flesh; if now this temperate constitution of the Liver shall be altered, and the Liver rendered more hot & dry than formerly; then instead of good and laudable, I mean, fat and oily blood, it generates that which is hot and cholerick, or that which is serous, wheyish, & waterish. And thus it is that Medicaments hot and dry do both retard the propagation of an abundant and oleaginous blood, and also they waste, and by degrees consume the fat that is there already bred throughout the body. But then for the wasting or lessening of the flesh already bred, those Medicaments are the most prevalent in which acidity (or driness) is predominant, and the heat in a mediocrity. By what hath been said you cannot but understand, how that in curing this affect we ought heedfully to observe, whether it be the flesh, or whether or no it be the fat that offends in the excess; and so accordingly fit and proper Medicaments are to be made choice of: and as for such as are undoubtedly exceeding full of flesh (and such generally are all those that have the constitutions and habits of Wrestlers) we are not to prescribe unto them such Medicaments as either cause or encrease heat, but only such as meely dry and attenuate; and such are, Venesection, i. e. Blood-letting, Purgation, abstinence from food, and frictions, or rubbings. In fat persons we may notwithstanding properly enough make use of Remedies that are of a heating Nature; but yet so as that in the administering of them we be very circumspect, lest that by the overmuch heating we procure some other Disease.

And therefore when as the blood administers matter for the raising of an abundant store of flesh and fat, it is to be forthwith evacuated and diminished. And for such as are full of flesh we may safely enough exact a more liberal and copious evacuation of the blood, yet alwaies provided, that the evacuation be not prosecuted unto the extream, as Hippocrates cautions us, in the first Book of his Aphorisms, Aphor. 3. But in those that abound with fat, this letting out of the blood ought to be more sparing, since that fat persons are more propense unto cold distempers. Cupping-glasses also either with or without scarification are very useful and proper for both the one and the other. Frequent, rough, and hard frictions of the whole body are likewise chiefly convenient. Pliny in B. 11. Chap. 37. writes, That the Son of L. Apronius (who had been

*Fat drawn out of the body of one extremely fat.*

*Consul*) was contented to have his fatness drawn away from him, thereby to alleviate and lighten his body (till then immovable) of some part of his burden. But no man will easily admit of so desperate and barbarous a

Remedy; and therefore I forbear to speak any

thing more concerning it. Exsiccating or drying Baths, whether taken by drinking, or made use of for the bathing of the body, are in this case of singular benefit. Frequent purgations with Aloes (unto which may be added Murrh and Nitre) are here likewise very convenient; and consequently the Pills de Tribus must needs be a proper Remedy. Such are also all bitter and hot Medicaments administered, as namely, Wormwood, Myrrh, Frankincense, Rue, Oxytel simplex, and Oxytel compositum, Oxytel of Squills, the Syrup de duabus and de quinque radicibus; and generally all things that provoke and expel Urine. Wherefore the roots of Alparagus and Fennel, and of Parsley, and such like, ought very frequently to be used. This Powder likewise is much approved of, and commended; viz.

Take Salt of Nitre one dram; Allum two scruples; Myrrh, Frankincense, the Rind of the Wood Guajacum, the Root of Sarsaparilla; of each of these two drams; and so make a Powder: Of the which let half a dram be administered in the morning for two months together. Also the Salt of Vipers is very effectual for the purpose aforesaid.

### The Diet.

As concerning the Diet in this case, take this for a brief Directory. Let all the Meats and Drinks be such as render the lower belly loose and slippery, or as we use to express it in one only word, Soluble; and in the next place, let them be such as are easily concocted, but withal such as afford but little nourishment. Let their Wine be thin, and well diluted, i. e. made small with Water. Much fasting, and a more than ordinary frequent abstinence from food; and in a word, a continual spare diet exceedingly furthereth the diminution of Corpulency. Let them likewise accustom themselves to much and often exercise of the body, by all means carefully avoiding a sedentary life. And Galen tells us, in his 14. Book of the Method of Curing, and Chap. 15. (where he professedly treats of the Cure of extream fatness and Corpulency) that he on a time perfectly cured a man aged about forty yeers, who was exceeding fat and gross, even to the admiration of all that beheld him; and this he did, partly by an Antidote compounded and prepared of *Sal-theriac*, against the affects and diseases of the Joynts; and partly likewise by the administering of the right *Tberiaca* or Treacle made of Vipers; as also by an extenuating Diet after it; and for his exercise, swift running was enjoined him. He saith moreover that he fitted and prepared this person for this exercise of running, by a gentle and easie chafing and rubbing of him with hard and rough rubbing-cloaths made of new linnen cloth, until the skin became red; and then immediately upon the rubbing he anointed him with an Oyl that had in it some digestive Medicament; and



this Oyl the party was also to use (as abovesaid) after his running, and more than usual exercise.

### Chap. 5. Of an Inflammation:

**B**UT now that we may come to treat of Tumors properly so called (arising from the blood) those Tumors are indeed wondrous frequent, and they appear very commonly, in regard that they proceed not only of and from themselves, but they likewise happen and follow upon divers other affects, as Wounds, Fractures, disjoyntings, and the like. And this Tumor from the Blood is by the Grecians named *Pblegmone*, by the Latines an Inflammation. But now the word *Pblegmone* hath been very variously and in a far differing sense made use of by the ancient Physicians, and those of later standing. For with *Hippocrates*, and generally all the Physicians before *Erasistratus*, the word *Pblegmone* was used to signifie all sorts of *Phlogosies*, that is, every kind of extraordinary heat exceeding the bounds and transcending the limits of Nature, although it be without any afflux of matter, or any kind of swelling whatsoever. But after *Erasistratus* his daies, the word *Pblegmone* was accustomedly used to denote those Tumors alone in which there was not only a vehement and fiery inflamed heat, but likewise also therewithal a certain kind of renitency or resistance, and a beating in the part, with a more than ordinary redness of color; all which last mentioned Species of Tumors *Hippocrates* was wont to call *Oedemata sclera* and *epodyna*, that is to say, hard, callous, and painful swellings; as *Galen* hath observed in his second Book of the difference of Respiration or breathing, Chap. 7. and in his Book 3. Chap. 5. upon the first Book of *Hippocrates* his Aphorisms, Aphor. 65. and in his fourth Book of the Course of Diet in acute Diseases, Tome 21. Comment. 3. upon *Hippocrates* his Book of Fractures, text 5. and elsewhere.

*The subject of an inflammation.*

But now that we may make it apparent and manifest what an Inflammation is, and how to be defined, we will in the first place exactly weigh and consider the subject and cause

thereof; for as for the form thereof, it is of it self sufficiently evident and perspicuous. *Galen* in his Book of Tumors, Chap. 2. expresseth the subject by these terms, *Moria sarcode*, *partes carnosae*, that is to say, fleshy parts. For he there tells us that the word *Pblegmone* ought to be used concerning those parts which are affected with a greater swelling than ordinary, and which are full of flesh, stretched forth, resisting, grieved with a beating pain; and therewithal somewhat reddish.

*Whether the flesh alone may be inflamed.*

Which Assertion of his notwithstanding seems to have in it something that is very doubtful; and

that may well be questioned. For a *Pblegmone* happeneth likewise unto the Membranous parts; as to instance, in a *Pleurisie*, the Membrane that girts about and encompasseth the Ribs is inflamed; in the *Phrensie*, the Membranes of the Brain; and so in like manner, the small Vessels and Membranes of the eyes suffer an Inflammation in the affect which we call *Ophthalmia*, or an Inflammation in the uppermost skin of the eye. Neither are (besides the flesh) only the Membranous parts subject unto Inflammation; but also the glandulous or kernelly parts are often inflamed and swollen up by reason of the blood flowing into them. And last of all, not only the muscely flesh, but likewise also the substances of all the other bowels (which have their flesh much differing from that of the Muscles) are oftentimes afflicted with Inflammations; as it is most apparently manifest in the Inflammations of the Liver, Spleen, Brain, and all the rest of the Entrails. And this very Truth *Galen* himself waves not, neither doth he pass it over in silence, whenas (near about the close of the Chapter aforesaid) he thus writes; But likewise also in process of time, the skin it self (saith he) takes unto it self something of a fluid and fluxile Nature, as also do the Tunicles of the greater Vessels, and so likewise even the Membranes themselves in the part inflamed; and moreover also, even the Nerves and Tendons themselves in process of time are made to partake of this very same Inflammation: Thus much *Galen* himself acknowledgeth.

But now that we may the better acquit our selves in this present Controversie, we must know that by the abovesaid *Moria sarcode* or fleshy parts, we are not only to understand the flesh of the Muscles, which indeed is flesh in the most proper acceptation of the word; but we are likewise thereby to understand the several fleshes of the bowels, which we evermore term *Parenchymata*. Moreover also under the notion of a fleshy part are comprehended all the parts that are glandulous or kernelly; yea likewise even the parts that are Membranous. For these also may be said to have a flesh peculiar and proper to themselves: as *Galen* writes upon this very subject, in the 10. Book of his Method of Physick, Chap. 11. In each one of the Primary and simple parts there is, saith he, one part or portion of the substance thereof which is as it were fibrous, another that is Membranous, and a third that is fleshy. As for example, whenas a Vein hath but one only Tunicle, and that likewise very thin, we may even then and there discover many of the fibres in this one thin Tunicle, which are intersercted, as I may so say, by their certain Spider-like interweavings; and unto the which the very proper substance of the Vein doth adhere, as growing thereunto. But in other parts of the Body this flesh is of a far differing nature, neither hath it as yet gotten any common

common name. But that you may the better understand us now that we are treating of this subject, I know nothing to the contrary, but that you may term it a fleshy substance; or truly at leastwise we may call it a certain flesh peculiar and proper unto this little part; and of a differing Nature from that of the stomach, from that of the Liver, and likewise from that of the Arteries and Muscles; in al which the flesh is not one and the same, but (as I said) much differing. Thus far *Galen*. Wherefore that we may determine what the subject of an Inflammation is, we affirm it to be any kind of fleshy substance which hath Veins & Arteries which contain within them, and convey blood, the Cause of an Inflammation; and are therefore even upon this account opposit to the bones, which neither have, nor are so much as capable of receiving Veins. For in good truth, flesh is the chief and principal subject of Inflammation: yet notwithstanding the blood, if it both diffuse it self into the adjacent parts, and likewise draw those parts into a consent and agreement with it self, they may then al of them (both it & they) be truly said to be together inflamed: of which *Galen* treats at large, in his Book of Tumors, Chap. 2. where he thus writes: That al that flesh whose affection is now mainly, and in the highest degree become an Inflammation, should seem to be replenished with a flowing of the blood, both the color and the Tumor it self demonstrate; whereupon it appears all over humid and extremely moistened, like as is wool and a sponge. That filth and putrid matter which flows forth whenas the Inflammation hath gotten a little door or gate (as we may so term it) to cast it out by, gives a sufficient testimony unto the truth of what hath been said; and I am rightly of Opinion, that the skin it self is elevated, and extended round about, at once and together with the Tumors and swellings of those things that lie underneath it. And in tract of time even the skin it self participates somewhat of the aforementioned flux; insomuch that the Tunicles of the greater Vessels, and also the very Membranes themselves may suffer together with the part inflamed: and moreover also even the very Nerves and Tendons in process of time come to partake of this same Inflammation. Notwithstanding now and then it chanceth that the parts abovesaid (all or some of them) if they happen to be wounded, or any other way disaffected, then the hurtful distemper, I mean the Inflammation, hath its original from out of those very parts. But universally and generally there is not any thing that according to the bent of Nature perseveres to carry it self in al things exactly conformable unto the inflamed part, if there be but any the least stop put thereunto; but al things together with the flesh participate of the said flux; so that oftentimes it reacheth even the very bones, like as many times also is by them

(when they first of al are affected) much promoted and furthered. And in his sixth Book of the Method of Physick, Chap. 5. he thus writes: Neither do I greatly wonder (saith he) if something resembling a *Pblegmone* shal in a smal proportion chance to accrue even to the bones themselves when broken. The which likewise *Avicen* hath taught us in the 2. of his first Book, Doct. 1. Chap. 5. where he acquaints us that Tumors happen unto the Members that are soft; and yet notwithstanding that there is a time also when something happens unto the bones themselves, which is assimilated into the matter of a Tumor or Swelling, by the which said matter the Tumors magnitude is exceedingly heightened, and its humidity greatly augmented. And he adds the reason. Neither is it (saith he) at al to be wondered at, or ever a whit extraordinary, that that which receives an increase or addition with nutriment should likewise receive it, that is to say, an addition with superfluity, when either it penetrates into it, or shal otherwise besal it, as generated therein. And in the species of Teeth, *Galen* in his 5. Book of the Composition of Medicaments according to the parts affected, Chap. 8. informs us, That in the Teeth those things that are redundant and superfluous may excite and stir up in them a like resembling affection, or rather passion, such as is the Inflammation that appears in and neer about the fleshy parts. Yea, possible it is, not only that the bones should get a thicknes from the superfluous nourishment, but likewise that another bone should be super-added unto them; and grow up together with them. Concerning the which, *Abenzoar* in his 2. Thesis. Tract. 6. Chap. 1. hath these words: And now and then (saith he) the bones are ingrossed and greatly augmented in their superficies, either by the depraved corroding humors that are infused into the very bones, or otherwise by the thick quitor and mattery filth which passeth over upon them; from whence it is that they are hollowed, corroded, and augmented. And again afterwards he writes more at large upon this subject in these words: The bones (saith he) are sometimes greatned of (to use his own word) ingrossed beyond Nature's intencion, by reason of an overplentiful and gross course of Diet, it being likewise inordinate, suddenly and rashly fallen upon, and not (as rather it should have been) successively, and by degrees, advisedly entered into. And long it is not since I heard my Father say, that he on a time saw a certain man that had a bone super-added and bred in his back like unto the Harts Horn; and that it was not altogether so hard as the natural bones: and my Father himself (saith he) purged this man, and emptied forth the gross humors that were in him; and after he had so done, he then puts upon the bone certain exsiccating or extremely drying Medicaments; insomuch that the said bone fell forth of the body, like as the Hart casts his Horns, and at

as other Beasts shed theirs in the Spring time. And I my self also have had a Bone growing upon my Back, which bred me extraordinary great pain: and I thereupon by Purging freed my self of gross humors, and laid upon the Bone Resolutives, or Remedies of a dissolving faculty.

### The Causes.

As for the Cause of this preternatural affect, *Galen* writes that as it is altogether unknown unto the ignorant multitude of men, so it is not very well understood by all that profess themselves Physicians. For although, as I conceive, it is agreed upon by all Physicians, that Blood is the Cause of an Inflammation, yet notwithstanding lest that (as the same *Galen* writes in the place before alleadged) we should seem only to declare our own single Opinion, without any further enquiry thereinto; we will therefore make the more accurate search after (thereby to find out) the Cause of an Inflammation, in this manner following. There would be no Tumor at any time generated in any part of the Body, were it not that either its substance as it were boiling over with heat is poured out, or that from without some new substance makes its approach. For there are but two only causes to be assigned of the augmentation of the bulk and quantity in any thing whatsoever. For either the radical moisture through an internal or external heat is resolved into an aery substance, which (as it is well known) requires a far greater space & room for dilatation then formerly it had; or else, as we said before, some new substance is extrinsically from some other place superadded thereunto. Now therefore of necessity it is that one of these two causes must be present, when as in that hot and burning Tumor which we commonly call a *Pblegmone*, the part is lifted up into a greater bulk than is ordinary, or agreeable to the intention of Nature. But now, that the fervency and boiling up of the natural moisture, or the effusion thereof, is not the Cause, appears by this, because that every thing that is poured forth and converted, as it were, into spirits, when it is cooled it assumes again its pristine quantity, and (as we may so express it) puts off and laies aside the Tumor; as by common experience it is most apparent. But as for the parts inflamed, let them be never so vehemently cooled, yet will they never return into the former state and condition, nor ever cast off the Tumor or Swelling. Furthermore, if by reason of the effusion of the part, and its conversion into spirits, a Tumor should be caused in the part inflamed, then necessarily upon the incision of the part the spirit should appear; which yet (as we see) is nothing so: but that rather there follows an effusion of Blood; and the whole place by its colour and the looks thereof seems altogether full of Blood. It remains therefore, that the accession of some new substance is the cause of a *Pblegmone*. But now that this

new substance is the Blood, appears from hence, to wit, that the *Pblegmone* is exceeding red both within and without. Now this red colour is only

*Blood the  
nighest cause  
of an Inflam-  
mation.*

proper unto, and inseparable from the Blood; for there is nothing that waxeth red in the Body, beside the Blood and the Flesh; which later, notwithstanding, viz. the Flesh,

cannot by any means be the cause of a *Pblegmone*. For if the increment of the flesh were the cause of an Inflammation, there would be indeed a Tumor or Swelling in the part; yet so as notwithstanding the internal heat should remain sound, and in an healthful plight, without the least distemper; and that also it should not in the least vary its pristine nature, when as in no one thing that is augmented according to its substance the heat may properly be said to be heightened and encreased, so far forth that the increment of the substance and quantity should any way differ from the change or alteration of the qualities. But now the case is otherwise in a *Pblegmone*, wherein the colour is changed, and the heat grown to be more intense, the said colour evidently demonstrating not only the quantity, but likewise the quality of the substance. Moreover, that the Blood is cause of a *Pblegmone*, may be manifestly evidenced by this, that the place (in the greatest Inflammations especially, which now and then happen in Ulcers) appears and seems all bloody round about; which certainly would never be, if blood were not the cause of the Inflammation. Furthermore, that Blood is Cause of the Inflammation that generating of the Inflammation which happeneth in Wounds doth evidently demonstrate. For in new and fresh Wounds, the Blood (its true) at the first flows forth; but then afterward being compressed and kept in either by the hand, or else with Ligatures, or Medicaments that stop the issuing forth of blood, or else lastly being suppressed and staid of its own accord, it is then retained either in the Orifice or Cavities of the dissected Vessels, and there it is compacted, and so wrought that it grows together (like as clotted blood useth to do) and thereby a continued heaping up of the blood abundantly flowing thereunto it lifts up the part into a Tumor or Swelling, and causeth an Inflammation.

*An Inflam-  
mation what it is.*

Since therefore the Conjoint Cause of an Inflammation is proved to be the Blood preternaturally flowing thereunto, it is no hard matter thence to collect, that an Inflammation is a preternatural Tumor of the fleshy parts (as *Galen* in the place alleadged takes and understands the name of Flesh) arising from the preternatural afflux of the blood; and that thereupon it must necessarily be hot, red, extended; and accompanied with a kind of reniscency, or resisting property, pain, and pulsation or beating.

But



The manner  
how an Inflammation is bred.

But now, ~~that~~ there may not be left to remain any the least obscurity about the nature of an Inflammation; we will here add the manner also how a *Pblegmone* is generated; and this we wil do out of *Galen*, who in his Book touching the unequal *Intemperies*, Chap. 3. hath in these words described it: it is (saith he) a hot fluxion or flowing, the which when it hath seized upon and seated it self in some mucicelly part, at first the greater Veins and Arteries are fill'd up and distended; and next after them the lesser, and so it is carried on untill that at length it arrives even at the least of them. In these when the matter of the fluxion is forcibly impacted, and cannot therein be any longer contained, it is then transmitted unto the outward parts, partly through their own Orifices, and partly by a percolation, as it were, and straining or sweating out of it through the Tunicles: and then the void spaces which are betwixt the most principal parts are filled full with the fluxion. And so all those parts or places are on all sides very much heated and overpread. Those parts or Bodies are the Nerves, Ligaments, Membranes, the Flesh it self, and before all these the Veins and Arteries. For whereas the Veins and Arteries run along unto each particular part (by the which is received both nourishment and vital Spirit) so long as the blood flows in a due measure, and just proportion, and is contained within those its receptacles, the part is not wont to suffer any Inflammation at all; but then only, when at length the blood is overcopiously, and all on a huddle emptied and poured forth into the substance of the part by the Veins and Arteries. By which very thing also a *Pblegmone* is distinguished from other fluxions, in which the matter is diffused without the Veins into the whole substance of the part, and there doth distend and dilate it. For in a *Pblegmone*, although all the parts are (as I may so say) embued with blood, yet notwithstanding there is a certain order observed, to wit, that some of the parts should sooner receive the fluxion, and others of them not til afterward; untill that at length all of them come to be replenished and distended by the humor. Now this kind of order wholly depends upon the natural distribution of the greater Vessels containing the blood. For whereas the Veins and Arteries when they first of all make their entrance into the aforesaid Vessels are evermore the larger, and by how much the deeper they are distributed thereinto, so much the less they are; all this while there arises no Inflammation, unless it so chance that the blood be emptied forth into those smallest Veins, and again happen to fall out of them. And this that hath been said manifestly appears unto those that by an exact and accurate inspection take a right view of those very little and almost imperceptible Veins that are branched forth and extended unto that Tunicle of the Eye which O-

culists usually call *Adnate* or *Conjunctive*. For these indeed do evermore convey blood unto the Eye for its nourishment, and yet notwithstanding whilest that the Eye is free from distemper they are so exceeding smal, that they can hardly be discern'd by the sharpest sighted Eye. But then so soon as the Eye is inflamed, & those slender Veins are preternaturally replenished with blood, then they shew themselves, and become very conspicuous. And it is most agreeable to truth that thus it should be also in al other Inflammations, whatsoever they be. But as yet there is no Inflammation present, albeit the lesser Veins are even filled up with blood, untill that at length by and thorough them the blood be derived into the remaining substance of the parts; which may be done two waies. For in the first place, the blood is emptied forth by those very smal and most inconsiderable orifices of the Veins, by which the Veins do (as it were) gape & open themselves into the surrounding substance of the part, that so thereby the blood may through them the more easily drop forth, for nutrition or nourishment. Moreover likewise it strains and sweats through by the Tunicles of the Veins: for even the Tunicles of the Veins are in like manner so framed by nature, that they are not without their pores; through which, if not the blood it self, yet certainly the serosity or wheyness thereof, and its thinner part is exudated or sweated forth by a kind of percolation.

From what hath been hitherto spoken, the distinction of the conjunct cause from the cause merely antecedent in an Inflammation is sufficiently apparent. For the blood (which we have asserted to be the cause of a *Pblegmone*) doth in a double respect take upon it self the virtue and Nature of a cause. For either it is the next containing and conjunct cause, of which we have hitherto discoursed; to wit, as it hath already flown into the part, and is irremovably impacted therein, so far forth that it actually elevates that same part into a Tumor: or else it is the antecedent foregoing cause, to wit, as by reason of its abounding in the body it hath a power of flowing into, and by its influx of lifting up the part into a Tumor or Swelling. The which antecedent Cause in an Inflammation, like as also in other Tumors, falls again under a twofold consideration: to wit, either in regard of the Affect simply considered as it is to follow upon this cause which it hath a power to excite, although as yet it hath no being in the body. And so a Plethory (which is an extreme and overgreat fulness of good and laudable blood) is very frequently present in the body, albeit an Inflammation doth not instantly ensue thereupon. Or else secondly, it is considerable, as preceding and foregoing the affect that already hath a being; and is already actually existent in the Body; to wit, when as the Blood now floweth to the exciting and augmenting

The antecedent cause of an Inflammation.

menting of the Tumor. Which (to speak truth) is more rightly styled the antecedent cause, then was the former; since that this latter hath respect unto an effect already present; but the former relates only unto an effect which hapneth in the future time. But this antecedent cause, that it may flow together unto the place affected, it is thereunto moved and stirred up by other means; whilst that it is either transmitted from some where else; or else attracted by the part it self, for those very causes we have hitherto been treating of and explaining.

*The remote Causes.*

But now for those Causes which we commonly term Procatartick, more remote, and primitive, they are such as either conduce to the breeding of a copious and plentiful blood (as do all meats of good and much juyce) an easie and idle kind of life, and other such like requisites: Or else they are such as render the blood more acrimonious and sharp, as do all things that cause heat, an acid and tart aliments, wrath, watchings, stirrings, and exercises in the extreme, or else such as excite and stir up the blood to move unto the part affected, as doth the overgreat heat of the part, pain proceeding from a wound, from a fall, from contusion or beating, from a fracture, from disjoyntures, and the like causes; or else the weakness and imbecillity of the part affected receiving, compared and considered in reference to the vigour and strength of those other parts which transmit the abundant store of hot blood unto the aggrieved part. Notwithstanding, an Inflammation never happeneth to be generated by a leisurely and gradual storing up of blood; but it is evermore bred by a sudden and thronging affluence and influx of the said blood. For although it may so chance, that some kind of Humor may sensibly and by degrees be collected in some one part, which being heaped up, as aforesaid, may afterward begin to excite a certain kind of pain in the part; yet notwithstanding all this, an Inflammation is never produced until such time as the pain gives cause sufficient that a more plenteous store of blood should forthwith and very easily make its approach.

Notwithstanding we are to take notice, That although the Blood be the containing and antecedent Cause of an Inflammation, yet notwithstanding we say, that a Cacochymy, or a depraved ill digestion, and more especially sharp and cholerick humors, are the prime and principal cause that the blood be moved unto the part affected, in those Inflammations which are excited without any apparent cause, as Wounds, Contusions, and such like. For so it is, That when Nature is twinged and pulled by such like Humors, and yet notwithstanding is unable altogether to expel them out of the body, to the end that she may free the principal parts from the danger impending by reason of them, she assays to thrust them forth

unto the external and less principal parts: the which when it is not able to accomplish, unless it make use of the blood for a vehicle or (as we say) a Conduit-pipe of conveyance; and that the acrimonious humor it self excites a pain in that part into which it is thrust and shut up; hereupon it is that there follows a conflux of blood unto that part, and from it proceeds an Inflammation. And much after this manner, the Pleurisie, the Peripneumonia or the Inflammation and Impostume of the Lungs, the Quinsie, the Phrensie, the Inflammation of the Ears and Gums, the hot Tumors or Swellings in the groins called *Bubones*, Carbuncles, and such like are generated and excited.

### *The Differences.*

The principal Differences of an Inflammation are taken from the variety of the containing cause, and from the great difference of the blood that stirs up and begets the Inflammation. For a *Pblegmone* is said to be (for distinctions sake) either that which is a true and legitimate one, or otherwise that that is not a true *Pblegmone*, but rather a bastard and spurious one. The true and legitimate *Pblegmone* is that which proceeds from good blood, and such as is in a due natural temper, or at leastwise such as whereof there is more than ordinary store: and this is absolutely and simply termed a *Pblegmone*. But the spurious and counterfeit *Pblegmone* is that which hath its rise and original from corrupt and vitiated blood, and such as swerves from its natural temperament; and this may be occasioned two manner of waies: for if the blood doth neither lose its nature, nor change its substance; but only hath mingled together with it some other Humors, then there are three bastard spurious sorts of an Inflammation that thence arise. To wit, if Choler be mingled with the blood producing an Inflammation, it is then called *Pblegmone erysipelatos*; if Phlegm, *Pblegmone oedematodes*; if Melancholy, *Pblegmone scirrhus*. But if the blood change its substance, it then excites not any kind of blood-Tumor: for the blood (as *Galen* writes upon this very subject, in his 2d Book of the Differences of Feavers, Chap. 9.) if it be overmuch heated, and (as it may be so expressed) boyled to an extream intense height, then its more subtile and fat part is converted into yellow Choler; but the more thick part into black Choler, or, as we usually call it, the Melancholy humor.

### *The Signs Diagnostick.*

The Signs of Inflammation (as may be gathered out of its definition) are, heat, pain, a swelling and stretching out of the part, a renency or Resistance, a redness of color, and a pulsation or beating.

1. And in the first place, in this kind of Tumor there

there is present so intense a heat, that from it the Tumor hath its very name and denomination; and many indeed are the causes wherefore this heat is necessarily raised and stirred up. For first of all, the blood that through its overgreat abundance excites the *Phlegmone*, is hot, which heat it also communicates to the part affected. Moreover, whenas by the plenty of blood, and oftentimes likewise by a certain kind of thickness at the pores are so filled up and obstructed that the hot exhalations cannot sufficiently be sent forth and evaporated, neither the heat eventilated or cooled as is sought to be, the heat by retention of these exhalations and fuliginous vapors is much increased. Unto which also a third cause may be added, to wit, putrefaction: for the blood contained in the inflamed part assumes at length a putrid quality, by which (as is to be seen likewise in other things) the heat is excited, and communicated unto the part inflamed. And this heat is sometimes greater, sometimes less, according to the greatness and growth of those causes.

The second sign is Pain: for whereas there are two remarkable causes of pain, an *Intemperies* or distemper, and the solution of continuity, they both of them take place in Inflammations. For in truth this extraordinary heat by its distemper first of all excites pain: and then the abundance of blood by filling full and distending the part dissolveth continuity, and thus doing is the cause of this pain. Again, the pain that is thus caused is various & much different, viz. distending or stretching out, pulling or twinging, pressing and burdening, according to the variety of the parts affected: but more especially there is present a beating pain, which likewise for this very reason is peculiarly reckoned up amongst the proper signs of a *Phlegmone*, and of which more hereafter.

In the third place, a Distension. For when the plentiful store of blood doth not only fill the Veins and Arteries, but even the whole substance of the part, all things are now distended and stretched out, but chiefly the skin; the which as it lieth round about all the other parts, and hath a Membranous substance, must necessarily partake of the distension, and the extensive pain.

4. Fourthly, Renitency or resistance, or (as the Grecians call it) *Antitupia*, in like manner follows upon this repletion and distension. For albeit the inflamed part be not hard in its own nature, yet it is so stuffed out, and distended with store of blood, that now it will no longer answer the touch, neither yield thereunto, but resist and withstand it; and withal it appears hard unto the touch.

5. Fifthly, the parts inflamed wax red, the blood imparting this color unto them. For there is nothing in mans body that assumes this redness of color, besides the blood and flesh.

6. And lastly, In the sixth place, there is perceived in the inflamed parts a Pulse and beating

pain, to wit, when with grief and extreme sickness there is perceived a beating of the Artery in the inflamed part, which while the part was found was not to be perceived. From whence we are instructed (as *Galen* writes in his sixth Book of the parts affected, Chap. 7.) that this beating pain doth not happen unto all the parts, but only to such of them as have in them certain notable and remarkable Arteries, and that have a part endued with an exquisite sense; and when the inflammation is raised up unto a magnitude worthy of observation. Now this Pulsatory or beating pain chanceth from hence, that when they are lifted up and distended, the parts inflamed by reason of their store of blood do not allow nor afford a due, free, and sufficient room unto the Artery now distending it self, but that themselves are rather stretched out by the Artery lifting it self up; which said distension excites the pain. And this pulsatory pain is then most of all perceived, whenas the Inflammation tendeth toward a suppuration. For then the blood boils as it were, and grows exceeding hot; from whence it also comes to pass, that it assumes and makes use of a larger space of room, and so much the more distends the part; by the which part the Artery is henceforth much pressed & kept down in its motion, which we call *Diastole*; and then afterward hereupon the Artery likewise compresseth and bears down the adjacent and near neighboring parts that lie round about it.

The beating pain how it is caused.

### The Prognosticks.

In an Inflammation there are two things that it mainly and principally behoves us to presage, to wit, its event or termination, and then the exact and punctual time of the said termination. Now the Event is said to be good, when Nature overcometh the matter that breeds the Inflammation, which hapneth when either the Tumor is resolved, and the matter insensibly exhaled (which is the best kind of solution of an Inflammation) or else when the matter is suppurated and turned into that which we term *Pus*, being a thick and purulent matter. Or otherwise, secondly, The event may be said to be evil, or if ye wil, worst of all, when Nature doth not overcome and master the peccant matter; which hapneth when the Inflammation (if it be external) suddenly vanissheth and retires back to the internal parts; or when the natural heat being overcome and extinguished, the Member thereupon becomes putrified and seized upon by a Gangrene, inasmuch that if it be not forthwith cut off, ruine and death is felt threaten the whole body. Or else in the third place, there follows a Neutral Event (as some call it) which is absolutely evil; when the Tumor is hardened, and when upon the resolution and discussion of

The termination of an Inflammation, which is threefold.



the thinner parts (the more thick and gross parts remaining behind) the Inflammation degenerates into a *Scirrhus*. But now, which of these events is to be hoped for or expected, may probably be guessed at by comparing together the vigour and strength of Nature with the matter that causeth the Disease. For if the matter be not overmuch, not thick, not over deeply situated, not shut up under a hard and thick skin; if the body be not greatly impure, and Nature be strong, then a resolution, and an evacuation by an insensible transpiration may be hoped for. But if the matter more abound, be more than ordinary thick, be contained in a deeper place than usually, and be pent up under a thicker skin, then a suppuration is to be expected. That the matter is retreated unto the inward parts may be conjectured by this token, to wit, When we perceive the Tumor to be diminished, albeit there were no repulsive remedies administered and applied, to drive back the matter. That the extinction and overthrow of the heat is near approaching may be presaged by this, whenas the heat, redness of color, pain, and the pulse or beating is lessened, the Tumor notwithstanding still remaining; touching which more hereafter, when we shall come to treat of a Gangrene. But then lastly, an Inflammation for the most part then degenerates into a *Scirrhus*, when the matter is over viscous and clammy, and hard therewithal; and when the Natural heat being strong and vigorous, forthwith even in the very beginning of the distemper remedies that dissipate and disperse over forcibly are thereunto applied; which said remedies disperse and scatter the thinner parts thereof, and leave the thicker still remaining.

*The times of an Inflammation.*

That the time of the Event may be known, it is requisite that the times of the Inflammation be first of all known; and they are likewise heedfully to be observed by us (upon our knowledge of them) in relation unto the Cure. For unless the times of an Inflammation be well known and considered, we may soon run our selves into an Error, whilst we administer and apply Remedies that are any waies improper or incongruous unto any one particular of those several times. Now then, Inflammations (like as all other Tumors and Diseases) have four times or periods; its beginning, encrease, state or perfection, and its decay or declination. It commenceth or begins when the parts are replenished with blood, and when the swelling, pain, and stretching out are encreased, this we call the augmentation.

The state or perfection is then, when the Tumor, Distension, Pain, and all the other symptoms are most vehement, and in the height of their extremity. And lastly, the declination is then said to be, when the matter generating the Tumor is diminished, and the pain, heat, together with the other symptoms are become more remiss and gentle; or otherwise the matter is con-

verted into Pus or purulent matter.

But the truth is, these times are some while shorter, sometimes longer; and the Inflammations are sometimes sooner, and sometimes more slowly terminated. For (as *Galen* tells us in the sixth Book of the Aphorisms, Aphor. 49.) that which is of a thinner substance is in a shorter space digested; and that which is thick or tough requires a longer time for its digestion; but that which is thick and viscous requires a far longer time. And that Inflammation which hath seated it self in the fleshy parts is terminated according to the period of acute Diseases, to wit, fourteen daies: for the substance of the flesh is more soft and permeable, by reason of its thinness. But the substance of the Ligaments, Tendons, and Nerves, being more thick and hard, and thereupon with greater difficulty receiving the fluxion, for the same cause also doth with more difficulty discharge it self thereof; and hereupon the Inflammation in those parts is the longer time ere it attain unto its state and perfection, and is not so soon curable: but yet notwithstanding the Cure is in this case seldom or never prorogued beyond the term of fourty daies; if both the Physician rightly in all points discharge his part; and likewise the patient be in all things willing to submit.

### *The Indications and Cure.*

Whereas the containing cause of an Inflammation is the blood, which hath preternaturally (i. e. beyond or besides Nature's intention) flown in unto the part, the Cure is effected if that blood be removed out of the diseased part; and then great caution be had that it thenceforth flow no more unto the part affected; that so by this means, as well the containing as the antecedent cause may be wholly taken away. For whenas the affect cannot possibly be removed, without a first removal of that which causeth it; and the case so standing, that the causes ought to be taken away in the very same order that they follow one the other in; therefore we say that the Fluxion must first of all be extirpated. Now this intention may be accomplished, if care be taken to prevent the bloods abounding in the body, and that that which is there in great plenty flow not unto the part affected; and this with most safety and speed is to be effected by opening a Vein. For by this Venesection or blood-letting the great store of abounding blood is diminished, and the same is likewise drawn back from the aggrieved place: hence it is, that there is an exceeding great benefit arising from, and following upon this opening of a vein, in an Inflammation; so that it is seldom or never to be omitted, if the strength of the patient will permit it to be done. And indeed hardly can any other Remedies with safety in this case be applied, unless

*The Cure of a fluxion or flowing of the blood.*

*The benefit of blood-letting in an Inflammation.*

unless

unless opening a Vein have the precedence, and the abundance of blood be thereby diminished. For if we administer remedies to drive back, the body stil continuing full of blood, it is greatly to be feared lest that the matter should not be received by the other parts, and thereupon that it should altogether attempt a flowing unto some one or other certain particular part. And as for digestives, hot as they are, if they should be made use of in a body that is full, there might be just cause to doubt lest that there should be more matter attracted then discussed and dissipated.

**A Purgation.** Moreover also, albeit a *Cacochymy* or ill digestion and bad nourishment be not the cause of an Inflammation; yet notwithstanding, since it is a very rare thing to find a Body that is altogether free from this said *Cacochymie*, it will be very requisite to ordain a Purgation; which compleated, other Medicaments also are afterward to be administered, with an expectation of more success and greater benefit. And as we hinted to you before, although Inflammations take their Original principally from the blood, yet notwithstanding vicious humors very frequently give an occasion of their being, as also doth the aforesaid *Cacochymie*; and indeed herein the hot humors challenge the first place. For if by these Nature be at any time stir'd up and provoked, and it be so that she cannot of her self expel them, then she endeavors to thrust them forth by some and some unto the other parts: but when she fails short in the effecting of this also (unless she should withall transmit the blood thither) and that by an acrimonious humor sent unto the part a pain is excited; hereupon a conflux of the blood unto that same part into which Nature assaies to empty forth the vicious humor, is caused; and so consequently an Inflammation is generated. And from hence it is also, that from a *Cacochymie* there is very frequently produced a Pleurisie, an Inflammation or Impostume of the Lungs, the Squinancy or (as we use to term it) the Quinsie, and that kind of madness which we commonly call the Phrensie.

Moreover also the blood is abated, and no excessive store thereof bred in the body, if that meat be not taken in which either by its overgreat proportion, or else by reason of its substance, afford too much nourishment, and exceedingly conduceth to the generating a more plentiful store of blood than is requisite. Wherefore let the sick Person abstain from Wine, and let him use a sparing and slender Diet, which both hindreth the breeding of much blood; and if it be already over-much, doth by little and little lessen it.

But that the blood may not flow to the part affected, it may be prevented, if we deprive it of that which necessity requires that it should have to help forward and facilitate its motion; and if we likewise correct the thinness thereof, together with its overmuch aptness to motion; if we ob-

struct and streighten the passages through which it ought to be moved; and if we recall and draw it back from the part affected. The blood therefore, that it may be withheld from flowing unto the part affected, is to be altered, driven back, intercepted, and derived unto some other place.

**Alteration of the blood.** The Alteration of the blood is altogether necessary, that so, if it be overthor, thin, and fluxile or movable, it may be cooled, thickned, and rendred more unapt and less prone to motion: and this Alteration for the most part we ought the rather to procure in regard of the Feaver, which almost ever accompanieth the Phlegmone, or heat of the Liver. For it is a rare thing, that they which are infested with an Inflammation of any part should yet not be sensible of a Feaver. Wherefore we must use Medicaments made of *Succory*, *Endive*, *Violets*, *Lettice*, *Sorrel*, *Barley*, the greater cold Seeds, the juyce of Citron, of Pomegranates, and such like. And if the blood be more than ordinarily hot and thin, we ought also then to add those things that have in them an astringent quality; and such are *Roses*, *Purslane*, *Plantane*, and the like. But here notwithstanding we ought carefully to look to it, lest that the Veins being narrow and overstreightned, or there being obstructions in the Bowels, by the use of these or such like astringents more obstructions should be bred or increased.

And then again, we ought not only to administer contrary Medicaments for the altering of the blood; but likewise to remove from the Patient, and cause him to omit and forbear the use of such things as either introduce or augment those qualities whose absence we now require, as being better than their company. For instance, a hot Air is to be shun'd, surfeits with over-eating and drinking must be avoided, and Wine forborne; or if any be drank, it must be that which is weak and well diluted; all kind of violent motion is to be omitted, and rest rather to be indulged; Wrath and venereal Embracements ought likewise here carefully to be avoided and abstained from.

Revulsion or drawing back ought moreover to be ordained, and the humor is to be turn'd away unto a contrary place, that is, we must so order it, that a contrary motion may be procured unto the humor, and that it may move unto that part unto which it naturally tends; so that it may not flow unto the part affected. For, that the turning away and drawing of an humor flowing into some part unto that which is contrary may be termed Revulsion, we rightly take it for granted, and by *Hippocrates* at the first appointed and ordained. For (as *Galen* informs us in his fifth Book of the method of Physick, Chap. 3.) this was the invention of *Hippocrates*, that a Revulsion should be made up-  
The contrary in Revulsion.

to the contrary or opposite places. Now although it be much controverted by Physicians, what is here to be understood by this word Contrary; yet notwithstanding we judge the Opinion of *Galen* to be very plain and perspicuous, if we well examine together what he hath here and there oftentimes written upon this subject; and if we take a right view of the conditions that are requisite in a Revulsion. But that *Galen* by the word [Contrary] understood nothing else but the parts contrary, that is, far distant and remote from the part affected, is every where manifested in his own writings: for thus he argueth in his fourth of the meth. of Physick Chap. 6. If it be a perpetual standing rule (as we have learn'd from him, viz. from *Hippocrates*) that a fluxion if but beginning is to be drawn to the contraries, but if already fixed in the aggrieved part, it is then to be evacuated, either from the part it self which is afflicted, or else from that which is next neighboring unto it; we may now hence readily conclude, as to the point of this blood-letting, that at first (i. e. in the beginning of the distemper) it ought to be attempted from a far off, but afterwards from the affected parts themselves. Now what kind of remoteness, and what sort of longitude he understands, is explained in his fifth of the Method of Physick, Chap. 3. A Revulsion (saith he) ought alwaies to be carried downward in those affects which are upward; and upward evermore in those that are below: and moreover also the Revulsion ought to be made from the right side unto those on the left; and again in like manner, from those unto these: and semably, from those places that are internal unto such as are outwardly situate; and on the contrary, from these unto those. For when as the main scope of Revulsion is, not to evacuate those humors which are already contained in the part affected, but those rather that are flowing thereunto; and seeing it respects rather the part sending the blood, than that which receives it: from these premises it necessarily follows, that questionless this is required in every revulsion, to wit, that it should by all means procure a motion contrary unto that which flows, that so it may not any longer be moved unto the part affected; and for this cause, the revulsion must not be ordain'd either from the grieved part, or from that next unto it; but rather from the opposite, yea (and so far forth as possible it may be) from the places most remote from the affected part. And hence also it is that every opposition doth not constitute a contrariety, neither hath every kind of opposition any place in a Revulsion; but those oppositions alone which *Galen* (in the before alleadged third Chapter of the fifth Book of his Method of Physick) recites; to wit, upward and downward, from the right side parts unto the left, from the places that are within unto those that are external, and so on the contrary. Yet if there be only

but a very small inconsiderable distance, we cannot safely nor conveniently draw back from the parts more inward to those more externally situate, but then only when the distance is greater. But that opposition which is from before and behind, or according to the fore parts and hinder parts, hath no place in this kind of Revulsion, which is so called singly and absolutely. For neither if any affect shall chance to be in the backward part of the Head, are the Forehead Veins forthwith to be opened, by way of revulsion, since that may not be done (without manifest danger) during the continuance of the Plethory, and flowing of the humors. But enough hath been said of Revulsion in the fifth Book of Institutions, Part 2. Sect. 1. Chap. 18.

But that we may in few words contract whatsoever hath there more at large been spoken, and whatever else may be said upon this subject; it is in the first place to be taken notice of, that Revulsion is twofold, one, which is accomplished together with the evacuation of the humor, such as is that which is effected by Blood-letting, and Cupping-Glasses with Scarification; the other which is wrought without the evacuation of the humor, such as is that which is performed by Frictions or Rubbings, Ligatures, and Cupping-Glasses without Scarification. This latter is never to be practised but when the Revulsion is to be made unto the parts most remote, since that if it be instituted in the near adjacent parts, then the humor which is only stirred, and not totally evacuated, may without any difficulty or resistance rush upon the affected part. And it is very rare, and scarcely ever known, that this kind of revulsion hath place or any thing to do in an Inflammation, which requires a manifest, sensible, and suddain evacuation of the blood.

Furthermore, as for what concerns Revulsion which is effected by opening a Vein, this one thing at least is to be observed (which if it be well heeded, many intricate controversies touching the thing now in question may be determined) to wit, that the utmost endeavor must be used that a contrary motion may be procured unto the blood, and that (as much as possibly may be) drawn back unto that Fountain from whence it flows. And since that the Liver is the Fountain and Source of the blood, and that the greatest store of the blood is contained in the *Vena Cava* or great hollow Vein nigh about the Liver, we must do our utmost, that the blood which flows into the inflamed part may be drawn back towards its Spring-head; yea also if it be possible, unto the opposite part, yet notwithstanding so, that the blood which flows may be retracted and drawn back. And therefore in every Revulsion this at least is to be wrought, that the blood may obtain such a motion, as that by it the part affected may not be injured

Revulsion  
twofold:

Revulsion by  
opening of a  
Vein:



injured by its immoderate conflux, but that it may rather be again recalled from the diseased part. But how this may be effected in every part, here to declare unto you would be a business too tedious; besides, we have already elsewhere spoken to this very point, in our treating of particular affects.

*Revulsion when to be ordained, & after what manner.*

And by what hath been said (as I conjecture) it is sufficiently apparent, how and in what manner a revulsion is to be ordained in case of an Inflammation; so that there will not be any great need, that we should add much as touching the right and due administration thereof. For whereas revulsion is then only suitable and proper unto the Humors when they flow, and unto them alone, and not unto those which have done flowing, and have seated themselves in the part affected; it is hence manifest, that it ought to be instituted and appointed in the very first rise of the distemper. Notwithstanding this is not so to be understood, as if in the first appearing of an Inflammation we were instantly to put revulsion in practice; for if either there be no great store of blood, or if its rushing in upon the part be not over violent and impetuous, Medicaments that drive back and derive will be sufficient. But then only is Revulsion to be put in practice, when there is great plenty of blood, and a more than usual violent and forcible rushing thereof unto the part affected: and according to the greater or less proportion of this abundant blood, and the more or less vehemency of its motion, so answerably ought the Remedies and Medicaments that are prescribed for Revulsories or drawers back, to be ordained so much the more or less strong and forcible. But now that Revulsion which is made with an effusion or emptying forth of the matter must needs be greater than that which is made without it. But amongst all the Remedies which we term Revulsories or drawers back, the most prevalent and efficacious, is, the opening of a Vein; which said Venesection doth more effectually, or less strongly draw back, accordingly as the Veins that are opened be greater or less. The greater Veins are to be opened while the blood flows with greater violence, and (as we may say) with a more impetuous motion; and the lesser, when the Fluxion of the blood is less forcible and impetuous. For it is behoveful that the Remedies should be such as may by their celerity or swiftness contend with the overhasty motion of the matter. And therefore we acknowledge *Fernelius* to be in the right, in his second Book of the Method of Physick, Chap. 7. where he writes, That the opening of the Shoulder Vein in the Elbow doth very conveniently draw back all the affects of the Head, as well internal as external, arising from fulness; if they be on the right side, the right Vein; but if on the left side, the left Shoulder Vein is in the Elbow to be opened. But

if this be to be done more deliberately and slowly, as to instance, when the intention and main drift is only to anticipate and prevent future Diseases, then that Vein in the Hand which runs directly unto the Thumb and fore Finger is to be opened, unless haply it take its original from elsewhere, and not from the Shoulder Vein. But for those distempers which are seated betwixt the Channel bone and the Kidneys, the more inward Vein in the Elbow being opened doth more speedily and with greater force draw back from them; but more slowly and dully that Vein in the branch of the Hand; which is extended and stretched forth between the Ring-finger, and the little finger.

Repulsion or driving back is used to follow revulsion. For Repulsion and Revulsion as it were mutually assist each other; and hence it is that both these Remedies are to be administered in great Inflammations; yet notwithstanding Revulsion ought always to have the precedence. For Repelling Remedies that drive back may not safely be administered while the body continues full, since that the Vessels yet remaining full will hardly give way unto the Humor that is driven back; but if Revulsion be first made use of, where there is occasion for it, afterwards those things that drive back may with more safety be administered. For Repellers both drive back the flowing humor unto some other part, and so permit not the passage thereof into the distempered part; and they also likewise repress the humor which is newly flown into it, and which sticks in the Capillary Vessels; and so by this means they free the part affected from that overgreat abundance of blood. But albeit the benefit arising from these Repelling Remedies be very great and evident, as that whereby the fluxions even in their beginning (by the alone use of these Repellers) are stopped, and the part which began to be lifted up into a Tumor again falls down from its Swelling; yet notwithstanding these ought not evermore in all cases to be administered. For (that we may not again repeat what we said before, to wit, that driving back benefits nothing in a full and foul body, but that likewise it cannot then be so much as attempted without danger) it is also together improper and unfit to administer those things that drive back, when a far greater discommodity and inconvenience may be feared from the repulsion or driving back of the blood,

*Repulsion or driving back.*

*When Remedies that drive back are not to be made use of.*

than from the Inflammation it self; which may very well be, first, if the humor be malignant, venomous, and pestilent; the which if Nature shall thrust forth from the inward parts unto the outward, we ought not to drive it back again unto the internal parts, lest that it should (peradventure) make its retreat back unto those inward parts, and thereby, encrease the disease, and endanger the choaking

choaking of the man. Which very Caution is likewise to be observed in every other humor (be it what it wil) that Nature (rightly acting in a critical way) rejects and casts forth into any some one part. For Nature while it is rightly employed and busied is by no means to be impeded in her operation. Secondly, Those things that drive back are not safely to be administr'd in the parts which we term ignoble, or less considerable, being such as Nature hath ordained to receive the superfluities of the more noble Parts; unto which she is oftentimes wont to thrust but the Humors with which the more noble parts are burdened and even loaded; and such are the *Glandules* or Kernels in the Groins, Arm-pits, and behind the Ears. For if repelling Medicaments be applied unto these parts, there will be great cause to fear, lest the matter should again retire to the more noble and principal parts. Furthermore, thirdly, There are other places, and other parts likewise, unto the which Repellers may not commodiously be applied; and such are al those that in their situation too neerly neighbor upon the noble parts: For the very same thing (as before said) is to be feared, lest that the matter being driven back should invade some of the nobler parts, and create a greater mischief. In the fourth and last place, Repelling Remedies are not then to be tampered with, when the parts are situated in a place too profound, or over deep. For neither doth the virtue (as we call it) and strength of the Repelling Medicaments reach unto such parts; neither can it wel be prevented, but that those parts are hereby rather made more full, than any waies emptied. For while by Repelling Remedies the exterior parts are contracted, and from out of them the Humors are driven inwards, they are (after a sort) thrust and obtruded upon the affected part, the which by this means becomes more replenished.

*The time when Remedies that drive back are to be administr'd.*

But then again, For the time and season when these Repellers are to be administr'd, it is easily discernable. To wit, seeing that the main end and scope of driving back is this, That the flowing humor should be prohibited its passage, and rejected, therefore they are to be prescribed in the very beginning, and that most rightly and properly whilst the matter is yet flowing. But this notwithstanding ought evermore carefully to be observed, as we said before, that the body be not full. For if the body yet remain full, drivers back are not safely administr'd; whereas the blood hath not any free passage for its retreat, and so by this means becomes either more impacted into the part, or else rusheth into some more noble part, and so create a greater danger. But when indeed (even whilst it is in its augmentation) there is yet some of the blood in flowing, even then repelling Medicaments may be administr'd, yet not alone; whereupon we

judge it not amiss, that unto these we add and mingle therewithal some kind of Digestives, to the end that by the heat somewhat may together also be attenuated, and converted into exhalations.

*How Medicaments that drive back are to be mingled with those that digest.*

Now after what manner Repellers are to be mingled with Digestives, *Galen* instructs us in his sixth Book of the composition of Topical Medicaments, that is, Medicaments that are made suitable unto the part affected, Chap. 1. Like as (saith he) in the beginning those Medicaments that drive back that which flows in are useful and commodious; so, after the beginning, even unto the very end, those Remedies that consist of both together wil be requisite, to wit, such as have in them both a repelling faculty to drive back, and likewise a digestive faculty to discuss and scatter; and as for the time, the astringent Remedy that drives back ought to have the precedence, and in the end that which digests and dissipates; and in the time intervening betwixt the beginning and the end, the Remedies ought to consist of equal parts of both the sorts before specified. But whereas *Galen* elsewhere seems to be of a somewhat differing judgment, so that it may be doubted whether Digestives also are to be mingled in the very beginning, or that we are only to make use of Repellers; and whether or not in the state or perfection only digestives are to be applied, or otherwise whether that Repellers may not likewise be added and mingled therewith, these things thus controverted ought rightly to be understood; and thus indeed it may be done. For whereas each part of the times of an Inflammation may again also be divided as it were into three times or spaces, the end of the preceding participates the nature of the beginning that followeth, and almost agreeth with it: hereupon even almost in the first beginning of an Inflammation, or that part of the beginning which is yet further distant from the augmentation, Repellers only ought to be put in practice. But the beginning tending toward the augmentation, or in that very part of the beginning which having already made a good progress is now nigh unto the augmentation, it will be requisite and convenient therewith to mingle Digestives. In the augmentation, and the beginning of the state or perfection Digestives and Repellers are almost equally to be mingled together. For although the blood doth now no longer flow; yet notwithstanding, since it is not so altogether impacted, some part thereof may as yet be driven back. But then afterward in the midst of the state Digestives ought to take place, as most prevalent; and in the end of the state or perfection of the distemper the remedies alone are to be administr'd; and the same is also to be observed accordingly practised when the Inflammation is now at length in its declining condition.

Furthermore

The quality  
of Medica-  
ments that  
repell or  
drive back.

Furthermore, that in our Discourse we may make our approach, and come closely to speak of the subject Medicamentall matter it self, all repelling Remedies are cold; as Galen asserts in his fifth Book touching the making of simple Medicaments, Chap. 17. For like as heat attracts and draws, so that (whatever it be) that is cold repels or drives back from it self. But then, look as whatever is hot is not in or of it self the principle of the local motion, or attraction, but only as we use to say, *per accidens*, or accidentally; to wit, as it resolves into vapors the matter that is moist, in the room and place whereof (left a vacuity should happen and follow thereupon, which Nature evermore abhors, and wil by no means admit of) those things that are neer neighboring do afterward succeed: so in like manner, that which is cold doth nor of it self drive back, but accidentally, to wit, as it causeth a constriction; by which motion of constriction the thicker parts do coalesce and seat themselves close together, but the thinner are pressed forth. But then that coldness hath adjoynd with it sometimes humidity or moistness, and sometimes its contrary, siccity or driness. And hence it is,

Repellers  
two fold

that of such Remedies as drive back there are two sorts or kinds: one moist and cold, or waterish; the other cold and dry, or earthy; and as Galen tells us in the Book next before alleadged, it hath conjoynd with it a thicknes of the parts. Such as are of the latter sort, since that besides their coldness they have likewise an astringent power, they therefore with a double force, as by their coldness, so also by their astringent faculty, do the more strongly and vigorously repel and drive back. But then those cold and moist Repellers are more mild and gentle, which therefore have power only to drive back the thin humors that are seated in the superficies, and then also when there is no great store of them; and they are commodiously administered when heat and pain afflicts the part. For they do not only oppose and resist the influx of the humors, but they also allay the heat, and by relaxation do something mitigate and assuage the pain. But Repellers with astringition are proper in other cases; and chiefly if the fluxion proceed from the debility of the parts, and that the pain be not over urgent. For they strengthen the part receiving, that so it may not receive the humor flowing into it, and they drive back that which hath already flown in. And they profit likewise, if the Vessels through which the blood floweth be wide and large, like as when the Vessels are smal and streight the gentler sort of Repellers are sufficient. Of the former kind are, Housleek, Wall-Pennywort, Lettice, Purslane, Endive, Nightshade, the juyce of Gourds, Water Lentile, Fleawort, Water-lilly, Arrach, Violets, and all other Medicaments that are cold, and which

are indued with a Watry humor. Notwithstanding even among these themselves there are also certain degrees; and some of them have a greater, some a less efficacy. Wall-Pennywort and Fleawort drive back less forcibly than Lettice, Housleek, Purslane, and Nightshade.

Repellers with astringition are, the flowers and heads of Roses, the Leaves of the Bramble bush, Vine Leaves, Saunders, Medlers, the fruit of the Service Tree, Wild Pears, Quioces, the Leaves and Fruit of the Myrtle Tree, Pomegranate flowers, Frankincense, the Rinds of Pomegranates, Acacia, Bole Armenick, Earth of Lemnos (called *Terra sigillata* or sealed Earth) Dragons blood, the Leaves and Nuts of the Cypress Tree, Oak Leaves, unripe Galls, Cerufs, Litharge, Corals.

Out of these there are compounded divers Medicaments (which you shal anon find expressed) according to the diversity of the disease it self, and its circumstances. For of the Plants, either the crude raw Leaves themselves are imposed upon the grieved part; or otherwise if by reason of their roughness this shal not be deemed convenient then let them be boyled in water, in the which let linen cloaths be dipt, or else sponges thoroughly soaked, and so let them be laid upon the part affected. Or else the juyce is pressed forth, and applied in the same manner. But others of them are bruised, and then mingled with Liquors are applied in a different manner. Galen was wont to dip a sponge and wet it wel in an *Oxycrâte*, that is, a compound of Vinegar mingled with some other Liquor, and then to apply it unto the part. To the same end and purpose are convenient the Oyl of Roses and Myrtles, the Unguent of Roses, the cooling Santaline Cerecloth prescribed by Galen. And this likewise that followeth is an excellent Remedy, and in frequent use with Chirurgeons, v.z.

Take the Whites of Eggs, and Rose water, of each alike; let these be well shaken, and thoroughly mingled together; then let Linen Cloaths be wel wet and soaked therein, and so laid upon the part.

Or, Take Barley Meal, which boyl in Vinegar and the juyce of Plantane, and lay it upon the grieved part. Galen in his second Book to Glauco, Chap. 2. commendeth a Cataplasim of Housleek, Pomegranate Rinds boyled with Wine, and so made up with Sumach and Barley Meal. For this Cataplasim (as saith Galen) is absolutely the best in such like affects; and also very effectual to all those purposes we intend it for. For it drives back that which flows in, dries up what is therein contained, and fortifies the Members situate round about. Or it may be thus compounded:

Take Housleek three ounces; Barley Meal two ounces; Pomegranate Rinds one ounce; Sumach ten drams: bruise what is to be bruised, and then boyl them all together in Wine for a Cataplasim. Galen likewise made use of the Plat-  
stes



fter *Diachalciteos*, dissolved with the Oyl of *Roses*, or *Myrtle*. This likewise is profitable.

Take *Plantane*, *Roses*, *Lettice*, *Purslane*, of each alike, one good handful; boyl them in *Water*, unto which put a little *Vinegar* to mingle therewith, and then add *Barley meal*. Or,

Take the juyce of *Housleek*, *Plantane*, and *Roses*, of each one ounce and half, *Barley meal* one ounce, *Vinegar*, half an ounce, Oyl of *Roses* as much as will suffice; boyl them into the form of a *Pultise*. Or,

Take *Pomegranate rinds*, red *Saunders*, of each half an ounce, *Bolearmoniack* two ounces, *Barley meal* one ounce, *Housleek* one ounce and half, Oyl of *Roses* and *Myrtle* of each as much as is sufficient; and make a *Cataplasm*.

Where there is need of a stronger Repulsion, and if the part wil admit of it, those Remedies that are somewhat more forcible are to be used. As,

Take *Bolearmoniack*, *Dragonsblood*, of each one dram; the Root of the greater *Comfrey* half an ounce, *Barley meal* two ounces, make a powder; which as occasion shall require is with *Rosewater* and the white of an *Egg* made into the form of a *Cataplasm*, and so laid on.

*Interceptors  
and Defen-  
sives;*

Those things that Intercept (which are also commonly called *Defensives*) are the same with *Repellers*, and only differ in respect of the place whereunto they are applied. For *drivers back* are applied unto the very place inflamed, but *Interceptors* and *Defensives* unto the parts and waies by which the humor flows unto the affected part, that so it may be intercepted in its passage, and that the way may be shut up against it, that so it reach not unto the aggrieved part. And indeed these are most commodiously applied to those parts that have little or no *Flesh*, and unto those in which the *Vessels* do more appear and are conspicuous, as in the *joynts*, and above the *joynts*. As for instance, if the inflammation be in the *Hand*, they are then applied unto the *Wrist*; if betwixt the *Wrist* and the *Elbow*, they are then to be applied above the *Elbow*; if in the *Shoulder*, to the highest part thereof; if in the *Foot*, above the *Ankle-bone*; if in the *Leg*, above the *Knee*.

*Their Qua-  
lity:*

Now all *Interceptors* are cold, dry, & of an astringent or binding faculty: among which notwithstanding since there is no small difference, as erewhile was said of *Repellers*, we ought to use this gentler sort of them in the more tender bodies, where the fluxion is not great, the *Veins* smaller, and in the *Winter* time: But those of them that are more forcible are to be made use of in stronger Bodies, where the fluxion is greater, the *Vessels* wider, and in the *Summer* time. But Medicaments that inter-

cept are to be administered after a different manner. For either the juyces, as of *Quinces*, *Pomegranates*, *Plantane*, *Housleek*, the *Bramble* or *Blackberry bush*; or else the decoction of *Saunders*, *Pomegranate Flowers*, *Myrtles*, *Sumach*, *Roses*, or *Rosewater*, *Plantane*, *Housleek*, or *Vinegar* and *Oxycrates* are used, and *linen Cloaths* are well moistened in them, and then applied to the *Joyns* and the parts betwixt; or else, lastly, astringents being pulverized and mingled with proper liquid Remedies are to be administered.

The *Vulgar* or common *Defensive* is made after this manner, viz.

Take *Bolearmoniack*, *Dragons Blood*, *Lemnian* or sealed *Earth*, all the *Saunders*, of each one ounce; Oyl of *Roses* and *Myrtle*, of each a sufficient quantity, of *Wax* a small quantity, *Vinegar* of *Roses* one ounce, mingle them, and boyl them till the *Vinegar* be all consumed. Yet notwithstanding the Oyls and *Wax* are deservedly and not without cause to be suspected in these prescriptions. For by their fat unctuous or oily substance they mollifie the parts, and they likewise overheat them if they long stick upon them. And therefore it will be more safe to apply the aforesaid or such like powders mingled only with *Rose water* or *Oxycrate*; and if we would have them to be somewhat more forcibly astringent, mingled with the white of an *Egg* well beaten and shaken together. For by this means they stick and cleave the more tenaciously unto the parts, and cause a constriction thereof. As,

Take *Bolearmoniack*, *Dragons Blood*, of each an ounce, *Flowers* of red *Roses*, *Pomegranate flowers*, *Myrtles*, red *Saunders*, *Pomegranate rinds*, of each an ounce; make a Powder bereof, which afterward mingle with the white of an *Egg* and *Rose water*, or *Vinegar*, as much as will suffice.

And last of all, we may also in this place make use of derivation, which hath respect unto the blood that hath indeed already flown in, yet notwithstanding as yet is only poured forth without the *Veins* into the void spaces of the part, but as yet fluctuates or flows to and again in the *Veins*. Neither indeed can the blood possibly be derived which is already impacted in the part, or that already begins to be concocted, or to be turned into *Pus*, or quitty matter; since that it is now become more thick than formerly, and consists (as having taken up its abode) in that place out of which it cannot easily flow back, and thereupon is rendered the unsuiter for motion, and the more earnestly and greedily retained by Nature until it be there digested and concocted. From whence will easily appear, at what time the derivation ought to be ordained and administered, to wit, indeed in the very beginning of the Inflammation; and yet notwithstanding not instantly upon the very first

first onset of the Disease, but toward the augmentation thereof, when its beginning is now at hand, to wit, when by means of Revulsion and Evacuation already both prescribed and administered the blood is rendered not over abundant, and that which is doth not as yet pertinaciously and fixedly adhere unto, or stick in the parts, but as yet continues to be fluxile and apt to flow. Wherefore, that we may rightly understand that which is on all hands taken from granted, to wit, that during the consistency or continuance of the Inflammation derivation ought to be administered, this is not to be taken as meant either of the state or (as we call it) the perfection of the distemper, or of its declination, but rather of the latter part of its beginning.

Now in Derivation, that community and correspondence that is between the Veins and the part affected (of which we have formerly made mention) is especially to be observed. For

if the blood that is in the Veins of the affected part ought to be drawn thence unto the neighboring parts by derivation, then in this case we must evermore make choyce of such a Vein to effect it by as hath the neereft commerce and vicinity with the part affected; the which if it be opened, brings along with it an apparent and admirable benefit. But now for the measure and proportion that we ought so heedfully to take notice of & observe in letting blood by way of Derivation, Hippocrates informs us, in Book 7. of the Course of Diet in acute Diseases, chap. 10. The blood (saith he) must be drawn away so far forth, and so long, until it flow forth more red, and much yellower, or that instead of a ruddy color it appear to be of a livid, or leaden-like color. For (as Galen there tells us) whatsoever blood is contained in a *Pblegmone*, that same will be changed in its color through the abundance of heat, but the rest will all of it continue alike in all parts of the body. And for this cause, that blood which is contained in that side that is afflicted and inflamed with a *Pblegmone* must needs be much more red and ruddy than that which is dispersed and diffused throughout the whole body; especially if the body be pituitous or Phlegmy. Now if the blood that is diffused into the whole body appear to be all of it of a more ruddy color than ordinary, without doubt then that which accompanieth the *Pblegmone*, boyled and burnt as it is, must needs be changed into a black hew. And from hence it is, that a change in the color denotes and signifies a translocation of the blood from out of the part affected; which said change notwithstanding is not evermore to be expected, if strength be wanting in the Patient.

And after such like waies as these may the Humors that flowing forth together unto a part generate there a *Pblegmone* be removed from the agrieved part. Among the which before mentio-

ned notwithstanding, those Medicaments that drive back and derive very much, conduce (like as the other) for the removal of the humor that flows again into the part affected. For Repellers, although their principal scope be to repress the humor that flows in and is as yet contained within the Veins of the part; yet notwithstanding they have a power also to drive, and thrust back again into the Veins, & to cast out of the part those humors likewise that are newly fallen forth without those Veins, and as yet not irremovably fixed in the place whither they are fallen. For neither is it a thing impossible that the Humors that are fallen out of the Veins should again retire back into them; even as many sorts of Tumors in the skin evidence unto us the truth hereof, which now and then in a cold season suddenly vanish away, and disappear. And so likewise derivation, albeir it hardly call back those Humors that are fallen forth without the Veins; yet notwithstanding, as for the blood which fluctuates in the Veins of the inflamed part, it hath a power sufficient to draw it unto the neighboring parts, and by them to evacuate it.

Notwithstanding, since that by the *Evacuation* alone use of Repellers and Derivers, al the whole matter is seldom evacuated out of the part inflamed, but that after the use of them for the most part somewhat is left remaining behind, this ought in another manner and by other means to be evacuated. Now this evacuation is accomplished after a twofold manner; either insensibly and by an imperceptible transpiration (which the Grecians call *adolos diaphnoe*) or else sensibly and manifestly: The matter is evacuated insensibly by Diaphoreticks or Sweaters, as likewise by those that we term Digestive, Discussive, and resolving Medicaments. The sensible evacuation is performed by scarification, and the opening of the part, after suppuration, or (as we commonly term it) maturation of the peccant humor. We will therefore in the first place treat of the former manner of evacuation, and declare our opinion touching discussive Remedies.

But now, since that resolution or *Discussion* discussion is nothing else but an evacuation of the humor by an insensible transpiration, it will from hence easily be made to appear, that what is to be discussed ought to be thin or fluxile, and not over clammy and thick; neither the skin it self too much shut up and condensed. For if the matter be over thick, it cannot then be easily resolved into vapors: but if the skin be too thick and compact; like as also if the matter stick in a place over deep; when all or any of these happen, then the matter causing the distemper finds not easily any way for its passage forth, neither can any Remedies but what are very forcible penetrate unto the place affected.

H

More

*Discussives,  
what they  
are for their  
quality*

Moreover, since that all digestive Medicaments are hot in their operation (as by and by we shall further shew you) they are therefore to be administered not over hastily in the very beginning of the Inflammation; but then we ought rather to make use of Repellers, for the reasons before mentioned. But the Inflammation approaching now nigh unto (or if ye will, while it is yet in its passage towards) its augmentation, some kind of digesting Medicaments ought to be mingled with the Repellers: and so at along the quantity of the Discussives ought evermore to be increased, until at length in the declination they alone come to be administered. Now the truth is, all Digestives or Diaphoreticks are hot; for the Humor cannot be resolved, attenuated, and converted into vapors, but only by heat. But of such things as are hot there is a very great difference: for some of them do only rarefie, or open the orifices of the Vessels; other of them cut the Humors; and a third sort there is that attracts and draws them; and last of all, there are others that are of a burning quality. Now the Diaphoretick Medicaments differ from them all; and have in them this proper and peculiar faculty, to resolve the Humors, and to convert them into vapors. Which said quality of theirs may not so easily be described by their Cause; but it is rather discovered by the experience that we have of their effects: so that what cannot be deduced by reason, that same is supplied by experience and use. But now although all Diaphoretick Medicaments are in their own Nature hot, and that they acquire this faculty from a certain due proportion observed in their mixture; yet notwithstanding, among them, some are stronger, some weaker. Those of the milder sort are, Chamomile, Melilot, the Roots of Marsh-mallows, the Roots of white Lillies, and of Fenugreek, the stout or meal of Lupines, of Orobus or bitter Vetch, and of Cicers or Chiches; leavened Bread, Goose fat, old Oyl. The stronger of them are, Dill, Organy, Thyme, Pennyroyal, Hyssop, Calamint, Horehound, Orace roots, Rue, Sage, Annis seed, Fennel seed, Caraway seed, flowers of the Elder Tree, Ammoniack, Bdellium, Galbanum, Bulls fat, Bears grease, Oyl of Rue and Laurel. And those most of all forcible, are, Nitre, and the froth thereof, Sulphur or Brimstone, Lime, and the like.

We make use of the milder sort, when the matter is in a place not very deep; when the part affected and the body it self is more soft and relaxed, and the Inflammation but small and inconsiderable. But if the Inflammation be greater, and the matter situate more deep than ordinary, the body it self more hard and condensed, in this case the stronger Medicaments are to be administered. Notwithstanding we ought to use the stronger Discussives with due caution, lest that by them the

thinner parts of the Humors being dissolved and resolved, and the thicker parts left remaining behind, the Tumor should be hardened, and the Malady rendered incurable; which will most commodiously be prevented, if together with such things as forcibly discuss we likewise mingle those things that moisten and mollifie. We ought in like manner to be very cautious, that the Discussives be not over tart and biting, lest that by their biting property they the more excite pain, and augment the fluxion.

Now out of that before recited Medicameinical matter, there are divers kinds and forms. In the end of the beginning of the Inflammation, and likewise in the augmentation, such like Remedies as these that follow are of singular use.

Take Barley Meal two ounces; *what is to be done in the increase or augmentation of an inflammation* Linsed one ounce; the Powder of Camomile flowers half an ounce; boyl them in Vinegar; then add of Oyl of Roses and Camomile, and the fat of an Hen, of each alike as much as will suffice, and make a Cataplasim. Or otherwise:

Take Pellitory of the wall, Mallows, Plantane, of each one good handfull: boyl them in Water: with the which let there be a very small quantity of Vinegar wel mingled together, and so let them be bruised into small pieces: after they are thus brayed, add of Barley meal two ounces, Fenugreek seed an ounce and half: Oyl of Roses and Camomile, of each as much as will suffice, and make a Cataplasim.

A most excellent and useful Cataplasim to prevent Inflammations in Wounds, and in other cases. Viz.

Take the powder of Camomile flowers, of red Roses, of Wormwood, and Barley meal, a like quantity of them all: boyl them in pure clear Water, and make a Cataplasim. Or,

Take the powder of Camomile flowers, red Roses, Wormwood, Barley Meal, of each three ounces; Decoct them in common Water; then add Oyl of Roses one ounce and half, and make a Cataplasim.

In the state or perfection, such like as these that follow may be administered.

Take Camomile Flowers, and Melilot Flowers, the Leaves of Mallows, of each half a handfull; red Roses two large handfulls, boyl them in austere or sharp Wine, and then add of Fenugreek meal one ounce; Oyl of Camomile a sufficient quantity, and make thereof a Cataplasim. Or,

Take the Roots of white Lillies one ounce; the flowers of Camomile and Melilot, of each one good handfull: red Roses and the tops of Dill, of each half a handfull: boyl them in simple common Water, and let them be bruised very small: then



then let there be added, of the Meal of Millet seed, Fenugreek Meal, and Barley Meal, of each an ounce; Saffron half a dram; Oyl of Camomil as much as will suffice, and make a Cataplasim. Or,

Take the Pith of wheaten Bread six ounces; boyl it in common Water, and after this let it be strewed with the Powder of Camomile flowers and Melilot flowers, of each half an ounce, red Roses two drams, Saffron half a dram, and so make a Cataplasim.

And what in its declination.

Lastly, In the declination, such like Remedies are to be put in practice, Viz.

Take Marsh-mallow Root one ounce: the leaves of Mallows, Organy, the flowers of Camomil and Melilot, of each half an handful: Lin-seed, Fenugreek seed, and Dill seed, of each alike two drams: Decoct them in a sufficient quantity of Water, and make a fomentation to be applied warm with a Sponge. Or,

Take the Powder of Camomil Flowers, of Elder and Melilot flowers, of each of these half an ounce; Dill seed two drams, the Meal of Lin-seed, Fenugreek, and Beans, of each one ounce; Oyl of Dill and Camomile, of each alike as much as will suffice; and make a Cataplasim.

This (moreover) as touching Digestives is to be taken notice of; to wit, That if the matter be grosser and thicker than ordinary, insomuch that Digestives cannot satisfie the expectation by doing their office, we must then do our endeavor that the matter may be rendered fit for Discussion and transpiration by sweat; and this may conveniently and securely be done by mollifying Remedies. And therefore in such a case (as before we likewise hinted unto you) we ought not only to abstain from those Medicaments that over-heat and dry; since that they discuss, waft, and consume the humidity that is in the Tumor, and harden the matter, and so cause the Malady to become altogether incurable: but we ought likewise to administer mollifying and loosening Remedies, such as do moderately heat, and withal do not excessively dry, but rather moisten; which kind of Medicaments you may before find enumerated and reckoned up among the Digestives themselves; such as is Hens fat, Goose fat, the Roots of Marsh-mallows and white Lillies, Mallows, Lin-seed, Fenugreek, Bdellium, Ammoniacum, and such like; all which are most fitly and conveniently administered when the matter is thicker than usual, as we shall further shew you in its proper place, when we come to speak of Emollients or Mollifiers. And in this manner the matter contained in an Inflammation is to be removed by insensible transpiration.

But we have acquainted you that this matter is sensibly and perspicuously poured forth either by Scarification, or by opening of the part, after that the Pus or purulent matter is generated. As for

what concerneth Scarification, that it ought to be administered, Galen gives us his judgment clearly for it, whilst that in his ninety fifth Chapter of the Method of Physick he thus writes: But thou shalt more especially evacuate (saith he) both by the useful assistance of scarification, and by the help of Medicaments that have in them a power and faculty to dissolve, in case thou observe any thing to be contained in the intervening middle spaces. And in his second Chapter of a Tumor he thus writes: It is (saith he) by Physicians found to be expedient, in the case aforesaid, not only to discuss by the means of heaters, but likewise sensibly to evacuate at least some part or portion of the blood it self, by making scarifications in the Skin. But here then we are to know, that great heed and circumspection ought to be taken and had, whether or no the matter may be turned into Pus, as we term it, being the stony feid matter ensuing upon maturation. For if we may probably hope for the said suppuration, then the above mentioned scarifications have not any the least place. But then on the other hand, if the matter may not be changed into the said Pus or matter, and that notwithstanding likewise there be little or no hope that possibly it may be wholly discussed or scattered by the application of Medicaments, then in this case both Scarifications and Cupping-glasses may, nay ought to be administered. For these two are a very effectual and prevalent Remedy for the evacuation of the matter (whatever it be) that sticks and is deeply situated, and which seemeth forthwith to be in the ready way of conversion into a Scirrhus. And therefore they are by no means to be administered in the beginning or first appearance of the Inflammation, but at length after that the body is sufficiently emptied, and that the Plegmone is at a stay; that so there may be further cause to fear that a new fluxion should be excited by that pain which originally proceeds from scarification; and then only when we have a purpose to extract that which remains over and above after the use of other convenient Remedies. Yet notwithstanding Scarification hath place only in those parts which in other cases likewise are fit to undergo and suffer the said Scarification. For if an Inflammation happen unto any part unto the which in any other case Scarification ought not to be administered, I conceive that there will be found no man so rash and undvised, as that he dare be so adventurous as after a Plegmone (for the evacuation of the residue of the matter) to apply Cupping-glasses and administer scarifications unto the part affected. But very rare is it that scarifications are admitted and allowed of for the use and purpose aforesaid.

But the safest and most usual way of curing an Inflammation, is, that the matter which hath flown in unto the part be discussed by the Medicaments before propounded. But if thereby it may

*Suppuration* | not be effected, we must then have recourse unto some other means for the curing of the *Pblegmone*, and that is by Suppuration.

Now all this that hath been said must be understood as spoken of a pure and simple *Pblegmone*. But if the Inflammation be not pure, but that it rather decline unto the nature of an *Erysipelas*, or an *Oedema*, or a *Scirrhus*, then those Medicaments that are proper and convenient for these and such like Tumors are to be intermingled with the order; yet evermore with this Proviso, that such of them as relate unto the *Pblegmone* be alwaies predominant.

### *The Cure of an Inflammation degenerating into an Impostume.*

*The generation of an Impostume.*

If therefore there be no hope that the Inflammation may be compleatly cured by the helps and means hitherto propounded (which will appear from the more intense signs of the Inflammation, to wit, grievous pain that encreases day after day, a manifest Pulsation or beating, and an evident discernable extension or stretching out of the part) then we ought instantly to use our utmost endeavor, that the matter that is the cause of the Inflammation may with all possible speed be concocted and brought unto suppuration, that is, converted into *Pus*. For neither can the matter yet unconcocted, and as yet not turn'd into matter, be in a due manner evacuated; and then again, if any one open the inflamed part before the said *Pus* be compleated, he shal thence draw forth nothing; and shal encrease and add unto the Malady rather than relieve and cure it. But if that same part shal be opened, the purulent matter being already elaborated and thereby brought to a due perfection, then all whatever is superfluous in the inflamed part may most commodiously be evacuated. And therefore we conclude, that the matter is first of al to be concocted, and so far forth as possible may be digested by the native radical heat. For although that matter which is contained in a *Pblegmone* can never be so far forth concocted and elaborated that it may be rendred any waies useful and profitable to Nature, and in any sort fit to nourish the parts; Yet notwithstanding, since that there are therein certain qualities which are to Nature very offensive and burdensome, those may be taken away; and a certain kind of equality, and moderation of the qualities may be instituted; and a separation of the corrupt humors from those that are good and such as are meet to nourish the Body may be wrought; which said elaboration of the humor is here termed concoction and suppuration. And when this that is superfluous and corrupt in the part inflamed is separated from what is useful, good, and serviceable, and that the vicious qualities are

now hereby corrected and amended; and the very proper substance of the blood it self shal be changed into an equal whitish and smooth matter, and gathered together into its proper and peculiar place, so that now without any difficulty at all it may upon the opening of the part be evacuated; then and not til then the *Pus* is said to be now already perfectly concocted; and that same collection or gathering together of the stony filth, termed *Pus* or matter, into some one particular place, is by the Grecians called *Apostema*, and by the Latines *Abscessus*; with us (in English) it is named an *Apostem* or *Impostume*, as hath been said before in the first Chapter. Now that concoction in mans Body is Natures work alone, the which by the help and assistance of the native heat digests the humors, takes pains with them, and as it were leads them along until it hath brought them unto that perfection which they ought to receive: which said heat if it be strong and vigorous, then we use to say, that the *Pus* or matter thereby bred is good and laudable; and it is (as we may find in the first Prognostick, Tom. 42.) white, equal, smooth, and not very stinking and noysom. But if the innate heat be weak, then it will be quite and clean contrary unto what was in the former case. And therefore the Physicians office is, and his main care must be to cherish or preserve, and encrease the native or natural heat in the inflamed parts, that so by means of it the generating and breeding of the said *Pus* may the better succeed, and the more easily attain unto its perfection. The innate heat is conserved and augmented, if in the first place we take course to hinder the issuing forth of it, and then that in the next place we use all possible caution, that whatsoever of it is more debile or weak in the more external parts may not be dissipated by the ambient Air: and moreover, if Medicaments agreeable and suitable unto the Native heat be applied to the part affected; and hence it is that the Medicaments prescribed to facilitate the said suppuration or production of *Pus*, ought to be such as bear a resemblance unto the native heat in the part to which they are applied. And thereupon since that our Nature is moist and hot, the Medicaments ought in like manner to be answerable, to wit, hot and moist. Furthermore, let them be such as we term *Emplastick*, that is, such as have in them a certain clamminess, that so they may fill up the Pores of the Skin, and that they may prohibit and prevent the flowing forth of that heat that is so apt to evaporate. For all those remedies that are of a cleansing property, or else those Medicaments that forcibly heat (such as Cataplasms of Bean meal, Fenugreek, Chiches, Lupines, &c.) seeing that they permit the vapors to exhale and vent themselves outwardly, they may indeed in this respect be said to dry, but they little or nothing at all further Suppuration.

Take *Marshmallow roots three ounces, the Leaves*

Leaves of common Mallows, and Bears-breech, of each one large handful; and then having boyled and mash'd them, add thereto of Swines grease as much as wil suffice; mingle and use them. Or,

Take Marshmallow roots, white Lillies, of each two ounces; Mallow Leaves, two large handfuls; sul and fat dryed Figs, in number ten; boyl and bruiſe them ſmal, then add of Wheaten meal two ounces, Linſeed half an ounce; mingle and paſſ them through a fine Hair-ſieve, and after add of Swines fat, Butter, or Oyl of white Lillies as much as is ſufficient, and make a Cataplaſm. Or,

Take Marshmallow roots, Onions, white Lillies, alike of each two ounces, Wheaten meal one ounce, Linſeed ſix drams, Turpentine half an ounce, Saffron one ſcruple, Hens fat, and Oyl of Camomile, of each as much as wil ſuffice, and ſo make a Cataplaſm.

When the Pus, that is, the purulent matter, hath once arrived at its perfection, we muſt then do our endeavor that with all ſpeed poſſible it may be evacuated. But then firſt of all it muſt manifeſtly appear unto us, whether or no the Pus be already made and brought to perfection. For although in general we have already before (in Chap. 3. concerning Impoſtumes) ſpoken of this ſame ſubject; yet notwithstanding thoſe things which are moſt proper to an Inflammation ſeem needfull here again to be repeated. Now therefore the beſt and ſureſt ſign is taken from the Touch. And firſt, if the part be perceived to be ſoft whileſt that it is preſſed, and that there is therein felt (as it were) a certain kind of fluctuation; to wit, if two fingers of both hands, or the fore-finger and middle finger of one hand be applied to the Tumor, but yet ſo that they touch not one the other, but be ſome little diſtance aſunder, and that one of the fingers preſſ down the Tumor, & the other not: for then a certain fluctuation and motion of the matter which is given forth from place to place is perceived under the other finger that lies quiet. But here notwithstanding it will not be amiſs to take this caution, leſt that we be miſtaken, and either (the maturation being compleated) deem that there is no Pus or matter lying underneath, or elſe, that we open the part, albeit there (indeed) be no filth, which we uſually call Pus or matter. For why, there appears a Fluctuation in ſome certain parts, even whileſt they are ſound; ſuch as are the places about the Knees. And on the contrary, now and then the ſaid Pus or filthy ſnot-like matter, although (as to its maturation or ripening) it be compleated, yet it doth not evermore of it ſelf evidence the ſigns and tokens thereof. Touching which Hippocrates likewiſe makes mention in his ſixth Book, Aphor. 41. where he thus writes: Unto whom purulent matter exiſting and abiding in the Body doth notwithstanding diſappear, and not diſcover

it ſelf by any kind of token or ſignification, there we are to underſtand that it doth not diſcloſe it ſelf either by reaſon of its own thickneſs, or the condeneſedneſs of the place. To wit, the ſaid Pus ever and anon lieth hid and conceal'd and doth not diſcover it ſelf, either by the reaſon of the denſity, that is, the thickneſs, and withal the hardneſs of the place affected; or elſe becauſe of the profundity, or if you wil, the depth of the place where it reſides; as for inſtance, when an Impoſtume hath its reſidence, and lies hid between the Muſcles of the Belly, or of the Thigh, or of the great Joynts: like as it comes to paſs alſo in the Heel, and the ſole of the Foot, by means of the Skins extraordinary thickneſs. Or elſe it happeneth, in regard that the ſaid Pus it ſelf is overgoſs and thick; upon which account it neither can be driven forth unto the ſuperficies, neither doth it yeild unto the compreſſion of the fingers, and ſo conſequently fluctuate.

There are moreover other ſigns of Pus (when perfectly bred) diſappearing and lying hid. To wit, ſecondly, the place (in reference to its color) declineth unto a certain kind of whiteiſhneſs, when the maturation is already terminated; whereas before and until ſuch time as the ſilky corrupt matter was ripened, it was of a more ruddy or reddiſh color. Thirdly, it is a ſign, and it argueth that the Pus or the quitor is compleatly ripened, if that both the heat and pain be remitted, and the extenſion and pulſation of the part be diminished; touching which likewiſe Hippocrates thus writes, in his ſixth Book, Aphor. 47. The pains and Feavers happen and are alwaiſes more intense whileſt that Pus is in breeding, and untill it be perfectly bred, then after ſuch time as it is fully ripened, and the maturation compleated. For the concoction being once made & paſt, there is ſome certain portion of the matter and of the vapors reſolved; and the matter being converted into Pus is gathered together into one place: from whence it likewiſe proceeds, that the ſenſe and feeling of pain is not now any longer ſo great and intollerable as before, and alſo all the other ſymptoms ſlacken and grow remiſs. The fourth ſign is, that the Tumor ſtruts forth (as it were) into an eminent height and ſharp-pointedneſs. For Nature thruſteth forth the elaborated and ripened Pus, and confines it unto ſome one place, and according to her power expels it unto the more external parts, and that place more eſpecially by the which it may with leaſt difficulty and danger be emptied and caſt forth.

If therefore by theſe ſigns we get aſſurance that the Pus (as we term it) is already made, we muſt then (as hath been ſaid) do our utmoſt endeavor, that without the leaſt delay it may be evacuated. For if the ſaid Pus be overlong detained it overthrowes the temper of the member, corrupts the adjoining & neer neighboring parts and ſo the Ulcer proyes to be intricate and full of turnings



turnings, or else degenerates into a Fistula; which is then wont more especially to happen, when the matter is sharp and malignant; or otherwise when the Inflammation is seated in the joynts, in the Arse-hole (as we call it) and such like parts.

*The evacuation of Pus or corrupt matter out of an Impostume.* Now as for the manner of Evacuation, it is (as hath likewise been shewn before, in the third Chapter, touching an Impostume in general) twofold; either by the opening of the part, or else by insensible transpiration. And very commonly indeed, if not for the most part, that kind of Impostume which we call *Vomica* (which is an Impostume full of snor-like filth or matter) is forthwith opened; and that also very conveniently, and usually with good success. Yet notwithstanding *Galen* in his third Book of the Method of Physick, Chap. 15. doth not instantly proceed to opening, but first of all assayes what may be done by exhalation and insensible discussion. And this is especially practised in that affect which we term the Kings Evil, and generally in all Swellings in the Neck, Arm-holes, and all the glandulous kernelly parts. For if such like parts should be opened and altered by the ambient Air, it is possible (and indeed very frequently seen) that from thence the Ulcers are rendered either altogether incurable, or at least more difficultly curable, and of longer duration. But here we cannot be over cautious. For whenas this said resolution and discussion of the purulent corrupt matter happeneth but seldom, and never but after a longer tract of time, so that thereupon there is great cause to fear, lest that it should in the mean while corrupt the neer neighboring parts, and cause windings to and fro in the part affected; then in this case, all the circumstances ought heedfully to be weighed, and duly considered. For if that the Pus be good and laudable, thin, not much of it, not scituate in a deep place, but rather seated in the superficies; and if the Skin be fatter and thinner, then perhaps we may have some ground to hope and expect a discussion. But if the case stand quite contrary, and it be so that the said Pus be not good and commendable, but that it be thick, fixed in a deeper place than ordinary, and likewise if the Skin be thicker than is convenient; then to attempt resolution, and to defer opening, will be a course altogether safe, and void of danger. But where there is any hope given of resolution, we must then make use of the stronger sort of Digestives to accomplish this discussion. Of this kind is that Medicament which *Paulus Aegineta* (in his fourth Book, Chap. 18.) hath prescribed; which drives forth those Impostumes that are already thoroughly concocted, and quite and clean discusseth and scattereth such as are not concocted.

Take of the stone Pyrita, Ammoniack, of each

one ounce and half: of Bean Meal six drams: let them be incorporated with liquid Roxin, and let the liquid Medicament be spread upon a Skin, and not taken away until it fall off of its own accord.

This likewise is singularly useful;

Take Ammoniack two ounces: Galbanum half an ounce: Lithargyrie three ounces: old Oyl as much as will suffice: make a Liniment.

But if (which but seldom happens) the Pus cannot insensibly be discussed, then it is sensibly to be emptied forth and evacuated by opening the Impostume. Now either the Impostume

*The opening of an Impostume.*

is broken of it self, or else it is opened by art. The Impostume is opened of it self, whilst that we expect and wait until the Pus corrode and fret away the skin it self; which we are allowed to do, in case the Tumor or Swelling be not so very great; but especially if it be in the outwardmost part of the Skin and flesh, and under the Skin that is not over thick. But it is not evermore safe to expect a Spontaneous and voluntary opening. For (as *Galen* writes upon this very subject, in his second Book to *Glauco*, and sixth Chapter) when Tumors which arrive at Impostumes shall be long neglected ere they be launced and cut (either by reason of the unskilfulness of those that undertake the Cure, or the fearfulness of the Patient that is under cure, who will not suffer themselves to be cut, but will rather wait and expect until that in process of time the Skin be corroded and eaten through) it then very often comes to pass that the

*when it is to be put in practice.*

whol Skin is exceedingly extenuated by reason of the purulent matter heaped up together neer unto the Impostume, not unlike unto that which the Greeks call *Racos*, that is, a rent Garment; from whence it is that Physicians have imposed upon it this appellation or name, *Racodes*, that is to say, rent and torn. And if this chance, the Skin in this manner and by this means extenuated will very hardly ever after be brought to cement and unite with the part that is subjected and lieth underneath it. But now, in the first place, the said opening is not to be delayed, and a voluntary eruption of the corrupt matter to be expected, if so be that the flesh and skin be thicker than ordinarily; and if there be in that part Nerves, Veins, and Tendons. For then the Impostume is to be opened as soon as possibly it may be, lest that if the opening be deferred, the malignancy of the purulent matter corrupt and eat alunder the Nerves and Tendons; especially if the Impostume be ever a whit nigh unto the Joynts. Yea, in some certain places, as for instance, neer about the Arse, and the Sutures, we are scarcely allowed to expect the highest and utmost perfection of the said Pus, lest that the more profound and deep parts putrefie, and thence a long lasting, or Fistula-like Ulcer be generated. And

And therefore if the corrosion or gnawing asunder of the Skin, and consequently that spontaneous eruption of the filth and corruption be not to be expected, the Impostume is then forthwith to be opened; and this ought to be performed in that place of it that is the highest and most eminent; for there the Skin is at the thinnest: and withal it is likewise to be opened at the same time, in some more sloping and inferior place thereof, that so the said Pus may the more easily pass forth. It is to be opened either with an Iron Instrument, or else by Medicaments. The Iron that openeth it must either be such as is heated in the fire, or else such an Instrument as is prepared to cut. We most rarely make use of the Iron heated in the fire, and never unless in case of urgent and extreme necessity; as for instance, if it should so chance, that there be a Tumor in those parts that are full of Veins and Arteries, and such other like cases. For there the dangerous flowing forth of the Blood is checked and suppressed by the fire-heated Iron. But most frequently it is opened with an Instrument that is fitted expediently to cut; and this knife ought to be sharpened to the utmost, that so the Section may be performed without putting the Patient unto any extremity and intollerable pain; and (if possibly it may be done) so that the sick party may take no notice thereof. But in the accomplishing of this work we must evermore look well unto it, that the Sections (or cuttings) be no larger than needs must; and yet (on the other hand) not so small, but that they relieve the present necessity; I mean, that by the Orifice of the incision the Pus may find an open and free passage forth. For if the Wound be less than that the corruption may rightly pass out thereof, then it will be requisite that the part be pressed down; by which compression pain is evermore excited, and the Ulcer is rendered callous and brawny; from whence a Fistula may possibly arise. But on the other side, if the Incision be wider than it needed to have been; then both the Cicatrix or Scar will be greater (and other unsightly) than if it had been artificially made; and then likewise the parts subjected will be altered by the ambient air; and now &c then the part is thereby made the weaker. Celsus (in his seventh Book, and second Chapter) gives in charge, that the Incision be made after the resemblance of the Myrtle Leaf, that is, that a simple downright Section be made, and that it be so long, that when the lips thereof are dilated the Wound may bear a resemblance to the Myrtle Leaf. And sometimes one only Section doth not suffice; but (as Celsus there instructs us) greater turnings and nooks are by incision to be made in two or more lines. And this also is carefully to be observed, That the Section be made according to the fibres, that is, answerable to the small strings or hairs of the Muscles. Now the Fibres proceed straight forth, and for the

most part according to the length of the body, unless it be in some certain places, as in the forehead. Now this is therefore to be heeded, that so we may not hurt or hinder the motion and action of the member; which yet we need not to observe, if the Tumor be in the Superficies, and close under the Skin; but then only, when the Pus sticks in the very substance of the Muscle. In the first place therefore we must take due heed that we keep at a good distance from the Nerves, as also the Veins and Arteries, and that we come not nigh them. The Instruments we make use of for the opening of Impostumes are very many. The first is the Razor; then next the Myrtle Knife, which they commonly call the Lancet; thirdly, a Knife or Instrument resembling the Olive Tree; fourthly, our Country-men likewise open Impostumes with the Pen-knife, or that with which they let blood when they open a Vein. But of necessity these Instruments must variously be used, according to the great variety and difference of circumstances. For if the Impostume be deeply seated, and the Skin be thicker than usually, then it will be needful proportionably to make the Section so much the more profound and deep. But if it be (as we use to say) *subcutaneous*, that is, lying close under the Skin, there will then be no necessity for this so deep an Incision.

But in regard there are many that will not admit of Section or Incision, we therefore prescribe and administer unto such persons Medicaments whereby the impostume may be opened. But those Medicaments are not all of them of one and the same sort, neither of a like efficacy; for some of them are weaker, and other stronger. The stronger sort of them are not over rashly to be administered. For they both prolong the Disease, and introduce an evil distemper into the part; and possibly they may likewise produce divers other ill symptoms. And therefore the gentler sort of them are first of all to be administered, which do rather ripen the matter and draw it to the highest part of the Tumor, and withal do there render the Skin more subtile, and cause it to become more tender, than truly and properly corrode, eat asunder, and break the Skin. And such are these that follow:

Take Marsh-mallow roots, and white Lillies, of each alike one ounce: Garlick, Onions roasted under embers, the flour of Fenugreek seed, dried Figs fat and full, of each two drams: the dough of Bread well leavened one dram and an half: Oyl of white Lillies, Butter, Swine's fat, of each alike as much as will suffice, and make a Cataplasmi. Or,

Take Onions, Garlick, Marsh-mallow roots, equal parts of them all: boyl them to a softness, and when they be well bray'd add the flour of Fenugreek as much as any one part of them: the fat of an old Hog as much as will suffice, and mingle them

them wel. This following is more forcible.

Take of sharp and sower Leaven half an ounce, Onions roasted under live coals one ounce, Doves Dung one dram; black Soap, Swines Fat, of each alike as much as is sufficient; and mingle them.

The Emplaster Diachylon mingled with Mustard Seed, Fig, and Salr, performs the same with the former.

But such like Medicaments are more especially applied unto that part in, the which the Impostume is sharp-pointed; and round about it there is put to somewhat that is maturative or ripening (understand it here of simple maturatives) as Diachylon, which to this end is wont to have a hole made through the mid'st. The strongest sort of them are those that we call potential Caustics; like which kind of Remedies we have described in our Institutions; among which that is the most efficacious, and withall the most safe, which is prepared and made out of Lee, out of which there is a certain sopo prepared; touching which we have likewise spoken in our Institutions. Now of such a Caustery we are to take a certain smal proportion, to the quantity of half a Cicer or Pease, and then apply it unto the part after this manner. Take the Cloth that is spread over with the Emplaster, and cause it to stick close to the Skin; then in the mid'st thereof cut a smal hole, somewhat narrower and streighter than you intend the Caustery shall be. After this take the Caustery, and being somewhat moistened with Spitcle apply it unto the Skin that appears and lies open to view through the aforesaid hole, and after ward lay on another Emplaster upon the former. After two or three hours remove the Caustery with the Plaister; upon the removal of which the part appears black, soft, and without any sense or feeling. And that this burnt part may be wholly taken away, let it be all over thoroughly besmeared with unsalted or fresh Butter, or with the fat of an Hog, or with some other fit Digestive. But if the hole be not wide and large enough, it may very easily be dilated, to wit, if either a little piece of Spunge or Gentian root, or Rape root dry be put thereinto. For these things aforesaid when they are filled full with humidity they are then dilated, and so consequently widen and enlarge the hole. The Spunge is thus to be prepared; the Spunge is to be wel soaked in the whites of an Egg twice or thrice thoroughly shaken together, then afterwards let it be close squeezed together on all sides, and then let it be leisurely dried in the shade: a smal portion of this (when it is dried) is to be taken and put upon the Ulcer. But in regard that the crustiness thereof wil not fall off in a few daies time, and that all this while the Pus or filthy corruption (unless it stick immediately under the Skin) is detained and imprisoned in the Impostume, for this very cause, if there were no other, it is by far the best way to

open the Impostume with an Iron.

The Impostume being now opened (whatever the way of opening it hath been) the Pus or matter is to be evacuated, but yet this needs not evermore to be wholly all at once or altogether. For if the Impostume be great, and contain much Pus within it, neer unto the Arteries and Veins, the whole matter and filth ought by no means to be evacuated all at once, lest that together therewith much of the Spirits be likewise evacuated and dissipated, and so by this means the sick Person should be caused to faint and swoon, or be debilitated and weakned: but rather the corruption is to be emptied forth by some and some, especially if the Patient be weak, or a Woman with Child; or in case the Patient be a Child, or lastly, if the sick party be very aged. When the Pus is evacuated, if either pain manifest it self, or else any reliques of the matter not suppured appear in the circumference, and it be so that the Pus it self be not wel and perfectly ripened; then the pain is to be mitigated, and more especially the remainder of the matter is speedily to be converted into the said Pus by some concocting Medicament, which they commonly call a Digestive. And such is that which is made of the Oyl of Roses, and the Yelks of Eggs: for it greatly mitigates the pain, and helps forward the generating and breeding of the Pus so often mentioned. Or,

Take Turpentine one ounce, one Yelk of an Egg, the Powder or Dust of Frankincense one dram, Oyl of Roses three drams; mingle them wel together.

Likewite the Emplaster Diachylon simplex is very profitable in this case.

When this is once accomplished, even while the concoction doch yet appear, we must come to those things that thoroughly cleanse and purge it: for neither can there flesh be bred, nor any conglutination (by drawing together the Lips of the Impostumated part) be made, unless the part be first cleaned. Which to effect,

Take Clear Turpentine one ounce, Honey of Roses six drams, the Yelk of one Egg; let them boyl together a litle, and afterward add of Saffron one scruple, and a litle quantity of Barley meal.

If there be need of a greater cleansing, you may then add the juyce of Smallage. As,

Take of crude Honey, Barley meal, of each alike, one ounce; of the Juyce of Smallage half an ounce, Saffron half a scruple; and mingle them.

If yet there be occasion for a more forcible cleanser, there may be added of the Unguent Egyptiack as much as wil suffice.

Centuary the less, and round Birthwort is here likewise very useful. As,

Take the juyce of the lesser Centuary two ounces, Smallage one ounce, Honey three ounces; let them boyl together, and after add of Barley meal, and



and the Vetch Orobus, of each six drams: when they are taken from the fire, add of Turpentine one ounce, of the Pouder of the Flower-de-luce root one dram; mingle them.

The Impostume being thoroughly cleansed, such Medicaments as breed & cause flesh are to be administered. Now of what sort these are, Galen in his third Book of the Method of Physick, the second, third, and fourth Chapters teacheth us at large; and we have likewise declared them in our Book of Institutions. As for example,

Take Frankincense, Mastick, of each half an ounce, Colaphony two ounces, Oyl of Roses and Honey, of each as much as is sufficient; let them be mingled. Or,

Take The greater Comfrey one handfull, Betony, Saint Johns-wort, Hors-tail Grass, of each half a handfull; boyl them in Wine, and bruise them well: out of the mash of them squeeze forth a Juyc, and add of Frankincense and Mastick, of each one ounce & half; Dragons blood an ounce, Honey and Turpentine, of each a sufficient quantity; boyl them until the juyc be consumed, and make an Unguent. Or,

Take Myrrh, Aloes, Sarcocol, of each an ounce; Honey six drams, White Wine as much as wil suffice; boyl them to an indifferent thickness.

When the Ulcer is filled up with Flesh, then those Medicaments which we call Epuloticks, that is, such as bring to a Scar, are to be administered; of which we have in like manner spoken in our Institutions; such as are, the Emplaster Diapalma or Diacalciteos, de minio of Vigo, and others, which are every where known.

## Chap. 6. Of the Sinus in the Tumor.

**B**Uc it oftentimes so happeneth, that although the said Pus or stinky filth be emptied forth of the Impostume, yet notwithstanding it becomes again replenished; from whence it comes to pass that the adjacent Skin doth not close, fasten and grow together with the Flesh that is underneath it; but there is a certain cavity or hollownes left to remain; and at length there ariseth a certain difficulty, if not impossibility, of cementing and conjoyning the skin with the Bodies lying underneath; which affect the Greeks call *Colpos*, and the Latines term it *Sinus*; to wit, when the entrance into the Impostume and Ulcer appears narrow enough: but the deeper and more profound part thereof diffuseth it self into a breadth.

### The Causes.

Now for the most part, the Causes of this Sinus are Impostumes or Suppurated Tumors, over-slowly opened, or not well cleansed. For the corruption if it be longer detained in the deep place than it ought to be acquirith a certain kind of sharp corroding quality, and there causeth divers

winding passages and turnings, such like as we find in Coney-borrows; and so unto the part in this manner affected there flow together from the neighboring parts, yea from all the whole body, such excrements and such humors as superabound; from whence afterwards it chanceth; that this kind of Sinus or windings to and fro can very hardly be conglutinated and filled up with Flesh.

### The Differences.

But now of these Sinus there is an exceeding great diversity: for they differ not only in the dimension of quantity (that one should be less and shorter, and another more deep or broad) or in their figure (that one should be straight, and another full of turnings, of this or that figure) but most especially they differ in the manner of their situation and position; because that kind of difference doth not a little vary the Cure. For that which tends upwards affords us a better hope and surer expectation of cure, seeing that by its orifice the Pus may the more readily flow forth and be evacuated. But that which tendeth downwards doth longer retain the said Pus; which being kept in doth further corrupt and corrode the parts. Wherefore such a Sinus is not to be cured, unless you open it on the adverse or opposite part, that so the Pus may freely come forth out of it. Now that the Physician may not be ignorant of these Differences, but that he may know and well understand whither the Sinus teacheth, and how great it is, an exact and strict search must be made therein by Tents, or otherwise with those Silver Instruments (we call them Probes) wherewith Chirurgeons are wont to search unto the bottom of deep Wounds; as likewise by Wax Candles (or the like) gently conveyed down into the very deepest part of the Sinus. And withall we must do our utmost endeavor, that the Sinus may be speedily cured; for unless it be speedily cured it contracts to it self a certain callous or brawny superficies; and in process of time it becomes exceeding hard; neither will it afterward be cured without much difficulty and danger.

Notwithstanding, what hopes there may be, the qualities of the part it self that is affected do evidently demonstrate, and chiefly the matter which flows forth out of the Sinus. For if it be much, not digested; if there be pain sensibly felt in the Sinus, or if a Tumor or Swelling appear, as yet there is but small hopes of its Cure: but then if the Pus be but little in quantity, if it be good, white; if there be present no pain, and all the whole place be equal; it is a great and strong Argument that the Sinus is already filled with Flesh.

### The Cure.

As for what concerns the Cure; since that hollownes & solution of Unity are the Causes of the Sinus;

*Sinus*, the solution of Unity points us out to the procurement of an uniting; but the Cavity instructs us, that repletion ought to be endeavored. But now those things that stand at a distance cannot be united, unless first that which is hollow be filled up; whereupon the Cavity must in the first place be replenished. But the Cavity can by no means be filled with flesh, unless the temper of the part be right as it ought; and that the said *Sinus* be free and clean from all its impurities. And therefore we must primarily provide by a sedulous endeavor, that if there be any distemper present it may be removed, and that the *Sinus* may be wel and thoroughly purged. And moreover, unless that either the Orifice of the said *Sinus* look downward, or that the Member may be so placed that the matter may freely flow out of it, before any thing else be done a way must be opened, and a passage forth made for the *Pus* or filthy corruption. If the Orifice of the Impostume lie open toward the inferior parts, the filth hath then a free passage forth, and such a like *Sinus* by the application of Cleaners is easily cured. But then if the Orifice be in the superior place, there is a necessity that we forthwith assay to open a free vent and passage forth for the corruption.

And this may be done in a twofold manner; either by dissecting the whole Cavity, or at least by opening the Orifice in the inferior part. Now of a truth it is the more convenient of the two that we open all the whole *Sinus*; since that by so doing the Ulcer may the more easily be purged and healed. But because we are not evermore allowed to put this in practice, to wit, when the *Sinus* is great, and that the whole part may not be dissected without danger; therefore sometimes we only open the *Sinus* in the bottom thereof. Which being done, and the *Sinus* opened, it is carefully and thoroughly to be cleansed and dried, lest that there be any of the *Pus* left remaining. For if there be any of it left behind, from thence Fistula's and recidivations or Relapses are wont to take their Original. And although the parts may seem to be conglutinated, yet notwithstanding they do not rightly cohere or stick together, but afterwards they do again part asunder. But now, to the furthering of the evacuation of the said *Pus* the use of Swathbands & Pillows doth very much conduce; if with them we streightly compress and strictly keep down the part affected from the higher part of the *Sinus* towards its Orifice. Now the Medicaments fitted for this use and purpose are, the Water of the Decoction of Barley, *Melicerate* (that is, Water and Honey sodden together) which is of it self sufficiently purgative, so that alone it is able to render that *Sinus* whose orifice is in the inferior place apt and fit for glutination or cementing together; *Mulsium*, that is, Wine and Honey sodden together, which both corroborate, and together withal purgeth; *Rozin*, Turpentine, Honey of Roses, Barley meal,

Bean meal, the flour of *Orobis* or bitter Vetch, of Lupiner, Lec, Spirit of Wine, Bath-Water, Allum Water, Oxymel, Unguent *Egyptiack*; which are the stronger sort of them, and to be administered only (or at least chiefly) in the most impure and nasty Ulcers.

Out of those before mentioned divers others may be made and compounded: As for example:

Take Honey of Roses strained six drams: Barley meal a sufficient quantity, to give it a thick Body. Or,

Take Honey of Roses strained six drams: cleer Turpentine one ounce: the juyce of Smalage and Wormwood, of each half an ounce: let them boyl together: and afterward add of Bean, Barley, and Lupine Meal, of each alike, as much as will suffice, and then mingle them thoroughly.

But when (as now and then it happens) the *Sinus* are manifold, or otherwise when they are of an extraordinary depth, so that to open them is altogether impossible; neither also can the Unguents possibly penetrate throughout their whole Cavity; then (in this case especially) liquid abstersives are chiefly approved of, as such which can insinuate and convey themselves into all parts of the *Sinus*. And such kind of Medicaments ought to be injected by a Tunnel, or by a pipe; and so soon as the Medicament is cast in, the Orifice ought sometimes to be stopt up with a Linnen cloth or Napkin; or else with a piece of Silk, to prevent the immediate flowing back again of the Medicament. As,

Take of whole Barley three pugils or smal handfuls: Centaury the lesser, and Wormwood, of each alike two pugils: boyl them in Melicerate, and make an injection. Or,

Take of the Water of decocted Barley, Melicerate, of each two ounces: Unguent *Egyptiack* half an ounce; mingle and inject them.

And thereupon, if by these kind of Medicaments the Ulcer be sufficiently cleansed and purged, then those Medicaments that produce and breed flesh are to be administered. For albeit Nature herself generate and breed flesh; yet notwithstanding Art doth by Medicaments so far forth assist Nature, as it removeth and carrieth away the excrements which much hinder her in her operation. For it is generally wel known that any part whatsoever (although it be sound) doth generate a twofold excrement, and drive it forth without the body; one whereof is more thin, which for the most part breathes forth by insensible transpiration, and is also not unusually evacuated by sweat; the other more gross and thick, which outwardly adheres unto the body, and by a general name is termed Scurf, filth, or nastiness. These excrements whenas they are resident in the aggrieved part, being weak and infirm, and cannot by the strength of Nature be expelled and driven forth

forth of the Ulcer, they still persist to stick there in the Ulcer, and the thick excrement renders the Ulcer filthy and foul; but the thin excrement makes the Ulcer to become moist. Which said excrements since that they are an impediment to Nature in the breeding of flesh, they are therefore altogether to be removed and taken away; and to speak more perspicuously and plainly, the filth and impurities thereof are to be thoroughly cleansed and wiped away from off the Ulcer, and the moisture is to be dried up.

Now those Medicaments which accomplish the abovesaid intentions are called *Sarcoticks*, i.e. Breeders of flesh; not that they themselves can indeed really generate flesh (which is the peculiar work of Nature alone) but because (as we have said) they take away the impediments, and suffice Nature with so good a blood, that from it good flesh may easily and soon be engendered. Now such like as these are dry, yet are they not of an over dry quality, but of such a faculty as very little (and that likewise moderately) exceeds the temperament of the affected or grieved part. But since that there is not the same kind or measure of driness in all Bodies and Members, thereupon the same matter is not useful for the engendering and breeding of flesh in all bodies and members; but those bodies and members which are drier require and need the dryer Medicaments; but those that are more humid and moist call for Medicaments that are less drying. The more mild and gentle of them are, Frankincense, Barley meal, Bean meal; the stronger are, the meal or flour of *Orobis* or bitter Vetch, Flower-de-luce root, Root of *Aristolochia*, Myrrh, Tutia, Pompholyx, and the like. From which we may very fitly and commodiously prepare Compositions for the present occasion. As,

Take Turpentine two ounces: Frankincense, Mastick, Colophony, of each half an ounce: Wax, Oyl of Roser, of each sufficient; make an Unguent.

But this following is somewhat stronger and more forcible. Viz.

Take Round *Aristolochia*, Flower-de-luce, the greater Comfrey, of each two drams: Mastick, Frankincense, Myrrh, Aloes, of each one dram: Honey and Turpentine, of each sufficient, and thoroughly mingle them.

If the body be more than ordinary dry, and if that hard flesh be to be generated, and that the Ulcer itself lie open, we may also then administer Medicaments in a dry form, and make up Sarcotick Powders, to strew thereupon. As,

Take Frankincense, Mastick, Colophony, of each alike: make a Powder. Or,

Take Aloes, Frankincense, Sarcocol, Dragons blood, of each as much as ye will, and make a Powder.

But if the Sinus be not open, then liquid Sarcoticks are by a Funnel to be injected after the

same manner as the cleansers were; and the orifice being close shut up, they are for a while to be left in the Sinus. For which end and purpose there may be injected austere or sharp Wine in which Frankincense hath been boyled; or the Decoction of *Aristolochia*, the great Comfrey which some call Wall-wort, Horehound, Roses, and the like, with Wine; unto which may be added, Frankincense, Myrrh, Aloes.

But now whether or no by means of these Medicaments the deeper parts of the Sinus are well cemented and exactly conjoined, that which floweth forth will evidently demonstrate: which if it be but little in quantity, and well digested; and moreover if there be no pain perceived in the Sinus it self, it is an argument that there is a perfect conglutination effected. But if the fourth, or (at the utmost) the seventh day shall be past, and yet notwithstanding a crude raw humor shall issue forth of the Ulcer, it is a sign that as yet the Sinus is not exactly united and conjoined, and that flesh is not as yet therein bred; whereupon those Medicaments that more forcibly dry (yet notwithstanding without any kind of mordication or biting) are then to be administered. When as now the Sinus is in a manner filled up, some one or other of the agglutinating Remedies ought to be applied, which may gently and without any the least acrimony close together the tender flesh that is generated and bred (of which sort are those which by the Greeks are called *Endimia*;) that so they may as it were conjoin the divided parts, and may likewise cure the new made Wounds: of which sort *Galen* (in his second Book of the composition of Medicaments according to their several kinds, Chap. 21. and 32.) hath given us a description of good store of them.

After that the agglutinating Medicament hath been applied and laid to, *Galen* directs us to cast round about it a new Sponge made as soft as possibly may be with sweet Wine, or with *Mulsim*, i.e. Wine and Honey sodden together; which said Sponge others also use to thoroughly soak, and thereby fill it full with the Decoction of Pomegranate Rinds, Roses, and the like; to wit, that it may dry it, and receive in the filthy corruption issuing forth of the Sinus, which might otherwise easily corrode the part, or excite and cause therein an intolerable itching: and this said binding round about he would have to begin from the bottom of the Sinus, and from thence that it tend toward the orifice. And likewise about the bottom thereof let Swathbands be rolled as hard and streightly as may be (provided still notwithstanding that it cause not pain) and then let them be loosened by degrees, and by little and little, until you come to the very mouth of the Sinus; in the which said mouth let the Medicament be tied unto it after a loose manner; neither let it too closely stop up the orifice, but leave a



passage forth for the *Pus* or snotty matter; unto which end, and for which purpose also let the Emplaster which is laid thereon have a hole cut (with a pair of Shears) in that same very place.

And this was the way and method used by the Ancients for the curing of a *Sinus*, and generally all sorts of hollow winding Ulcers; and to speak truth, it was sufficiently useful and commodious. Yet notwithstanding, *Franciscus Arcæus* in his second Book of the Curing of Wounds, the seventh Chapter, tells us of another far more easie and compendious course that he himself had found out and discovered in curing Apostems newly opened; whereby on the third, or on the fourth day at the furthest, all the aforesaid Cavity of Apostem might be remedied, and perfectly cured; by drawing together what was divided; (which operation we call commision and conglutination of the Imposstume) so that nothing should be left gaping, beside the opening or incision place, which was made by Art to the end that thereby the *Pus* might flow out, and be pressed forth; and that all this should be effected without any the least danger to the sick party, without much (if any) pains and labor, or any other difficulty. Now his way and method of Curing was as followeth. If the Tumor or Apostem be great, then (saith he) in the first place let it be opened in the best manner that may be; so that the little finger may be put into the orifice, and that thereby all the *Pus* that is contained within the Imposstume may be permitted to flow forth; and may likewise be thence expelled by a gentle compression of the place it self. The *Pus* being once expelled and evacuated, let the mouth of the *Sinus* be stopp'd with a Tent; and then an artificial Pillow or Cushion being laid and fastened down thereon, let it so remain (without removal) until the next day following. The day following, the Ligature being loosened, let the Ulcer be purified and carefully cleansed from all the *Pus*, if haply there be any left remaining underneath. After this is done, let a Pipe or small Cane of Lead be put into the orifice; the which let it be as big and large as is the Orifice it self; and let it reach even unto the Cavity or hollow place; but let it not by any means be forced any further. Upon this let the Basilick Emplaster spread upon a Linnen Cloth be imposed; in the which also the pipe may be contained; that it fall not forth; yet nevertheless leave a hole at the very Orifice of the Leaden Pipe or Cane. Afterwards, on either side of the Cavity let there be put triangular Pillows or Cushions (of which before) on either side one, so that all the hollow space may be filled up with either Pillow, &c. But let the Orifice of the *Sinus* in which is the Leaden Pipe be left free and open; neither let it be stopp'd up by the aforesaid Pillow, nor any waies obstructed by the Ligature or binding; that so all the *Pus* that lieth

underneath may be thoroughly purged out: afterward let the place covered by the Pillows be rolled about with a Swathband, so that it may be without the least pain; and let it be so ordered, that the Ligature may begin at or from the bottom, and tend toward the orifice; that so by this means all the *Pus* or filth that is within may be forced toward the Orifice, and through it may be pressed forth. The *Sinus* thus bound about is to be left in this manner until the day following; on which, the Ligature being loosened, we ought by making strict enquiry to find out how much of the Cavity remains; that so we may be thoroughly certified, Whether or no the aforesaid Pillows or Cushions did touch upon the places. For all those places which were subjected by the Pillows, &c. will all of them be found conglutinated and fast closed together. The which when we have discovered, the Pillows are again to be tied and fastened after the same fashion as they lay before; and so they are to continue until the next day. But now if so be that any of the Humor, or of the *Pus* seems to be left in any place, this (as before) is to be pressed forth with the Pillows fastened by the Swathband; together with which the gaping place doth coalesce and joyn close together. In this manner so soon as the parts are closed together, let the Pillows be removed; and then let there be imposed upon the Ulcer a Linnen cloth spread over with the Authors *Leopnine* Emplaster, or such other like Plaister, as suppose the Emplaster *Diapalma*; and you may not forget to wipe and cleanse it six or eight times every day.

But yet notwithstanding, as touching this way and manner of curing the *Sinus* and Cavities, it is first to be taken notice of, that this same doth succeed most happily in Apozems newly opened, and in them only: for as for an old *Sinus* (where all is not well within, and which almost declines unto callous Ulcers and Fistula's) the former way and manner of curing it is far better and safer. Moreover, this is likewise to be observed, that we ought well to look, whether or no there remain any reliicks of the indigested matter, spread thorough-out the part; which easily comes to be known by some apparent Tumor or Swelling; as also by its redness of colour. For otherwise, and as long as any thing preternatural sticks in the part, agglutination (as we term it) or closing up of the Orifice is not to be expected; neither is it to be so much as hoped for. And therefore be sure that the *Pus* it self be likewise cleansed and purged in the best manner that possibly you can.

Thirdly, This also is to be heeded, to wit, whether or no the place may conveniently enough be rolled about with Swathbands, and likewise whether the aforementioned Pillows or Cushions be streightly fastened, and tied down close enough, that so they may both compress and

keep

keep down the severed and disunited parts, and also press forth the Pus or filthy snot-like matter. For if so be that the Swath-bands gape, and that the Pillows press not down the part as they ought, then neither is there any Pus pressed forth, nor doth the part coalesce and meet together.

### Chap. 7. Of the Tumor Erysipelas or Rosa.

**T**HAT Tumor which the Greeks call *Erysipelas*, but we here of this Country (commonly) *Rosa* (from its rosie color) is altogether to be referred unto, and so to be accounted in the number of the Tumors that take their original from the Blood. All the Latines (*Celsus* only excepted, who retains the name *Erysipelas*) term it *Ignis Sacer*; we in English call it *St. Antonies fire*; of this *Ignis Sacer* the Poet *Lucretius* makes mention in his sixth Book.

*The Body all at once with Ulcers brand grows red,*

*As 'tis, when Ignis Sacer bath the wbol ore-spread.*

This Tumor is most an end by Physicians ranked among the Choleric. But yet there is ground and cause enough of doubting, from what humor it derives its beginning and Pedigree: For *Galen* himself seems now and then to stagger, and not always to stand to what he had spoken concerning it. For in his second Book to *Glaucō*, and first Chapter, he expressly writes, that the most thin and hot Blood, or Choler together with Blood (to wit, when both of them are hotter than is behooful) is the Cause of an exquisite *Erysipelas*; and there he determines that meer & pure Choler is not the original efficient cause of this said Tumor, but rather of that which we usually call *Herpes*. And in his Chap. 9. concerning Tumors he asserts, that *Herpes* is bred or caused, when a choleric fluxion (being indeed purely and exactly such) happens to be excited, and to exulcerate the Skin; but that when this said choleric flux is mingled with a waterish matter and with blood, & so is less sharp; and when it rather swells up the part into a Tumor then exulcerates it, that then an *Erysipelas* is excited. But contrariwise, in his Book of black Choler, Chap. 5. in his fourteenth Book of the Method of Physick Chap. 1, 2, 3. and B. 17. Chap. 2. in his Book of the Differences of Feavers, Chap. 5. and in his Book of the way of curing by Blood-letting, Chap. 8. and in divers other places, asserts that Choler is the cause of this Tumor; which latter opinion of *Galen* most of our Physitians follow.

But truly, if we lay aside the Authorities and Opinions of the Ancients, and look well into the thing itself, and if we confer the name of an *Erysipelas* upon that Tumor that is so well and commonly known unto our Country-men; and

lastly, if we take good notice of those things that daily befall the sick Persons in a Disease so well known; we shall then (without any scruple) judg the Opinion of *Galen* (which he propounds unto *Glaucō*, in his second Book and Chap. 1. and in his Book of Tumors, Chap. 9) to be by far the more true and probable.

For the very colour it self of the part affected (being altogether rosie) instructs us, that Blood rather than Choler is the cause of this Tumor. And although this kind of Tumor doth now and then from red or ruddy become yellowish, yet notwithstanding this is not altogether true of every *Erysipelas*, but only of some one certain species and difference thereof. Moreover, the humor that excites and causeth this Tumor is not altogether so sharp and tart as is Choler; and for this cause doth neither exulcerate, nor produce extream heat, or over vehement pain. Notwithstanding the Blood that excites this Tumor is the thinnest and most intensely hot, and it is vulgarly said to be bilious or choleric; the same that *Galen* also tells us in his second Book to *Glaucō*, Chap. 1. where he writes, that Choler alone (when it lieth hid and secret, and consists in some one member) doth excite and cause the Tumor *Herpes*. But then if so be that the fluxion shall be mingled, and consist of blood and yellow choler, (being both of them hotter than is meet) or else from the blood in this manner waxing hot, and being according to its substance most thin, we then call it an *Erysipelas*. For albeit that *Galen* in very many other places asserts an *Erysipelas* to proceed from Choler; yet notwithstanding, what he means and intends by Choler, he hath sufficiently declared in the place before alleaded. And if we consult experience, and those accidents that betide the sick Parties, we shall then find that he could not intend any thing but that Choler which they term natural and alimentary or nourishing, that is to say, the hottest and thinnest part of the blood, but such as is now grown extremely hot, & therefore the nearest that may be to Choler. But now, whatsoever kind of Choler we assign to be the cause of this Tumor, whether yellow, or pale; or like the rust of Brass, or Leek-coloured, they will not any of them agree with those things that happen in this Tumor. Furthermore this humor hath conjoyned with it a depraved quality, and a peculiar sort of corruption; and before such time as it breaks forth it excites and causeth exceeding great streights, not much unlike to those that the Plague (upon the first invasion) is wont to produce; and therefore the same kind of *Alexipharmaca* or counterpoisons that we make use of in the Pestilence are here likewise to be administered, for the expulsion thereof.

Notwithstanding, the words of *Galen*, and of other Authors (that affirm the original of this Tumor to spring from yellow Choler) may be drawn to a better sence; I mean, that they may be more rightly

rightly interpreted, if we say, that by Choler is to be understood the natural part of the blood, which is more thin and hot, and which is very commonly called Choler; but it were more fitly and properly named a bilious or cholerick blood; the which so soon as it begins to wax intently hot, and to boyl, is then excited this kind of Tumor. And very frequently there is also herewith mingled a certain portion of a most subtile thin and intently hot whey (the which if thou hast a mind, and art pleased to call it a bilious & cholerick whey I wil not gainsay or oppose thee) and then there is bred an exulcerated *Erysipelas*, yet only superficially; like as oftentimes it is wont to happen in the Face, when there arise and appear little bladders full of a waterish humor; and then the Skinf-skin alone is affected, and parts assunder. But if (together with it) the Skin it self shal be exulcerated (which ever and anon chanceth in the Thighs) then we may conclude that adust humors are therewith mingled; and this kind of *Erysipelas* is said to be, not pure, or if you will impure.

But of this Tumor enough hath been spoken in the second Book of Feavers, Chap. 16. which here we judge it not fit to repeat, in regard that there the Reader may by perusal be fully acquainted with what hath been written. I wil only repeat this, that the first rise of this affect is from a Feaver, or more plainly, that the affect is primarily and originally a Feaver. For neither doth an *Erysipelas* (or *Rosa*) invade the part but with a Feaver; which oftentimes a day or two before it breaks forth is wont exceedingly to afflict and excruciate the sick Person. But this Feaver is critically determined (as we wont to express it) and the Patient freed therefrom by means of this Tumor: and thereupon it is, that oftentimes a pain or some kind of swelling is perceived in the Glandules under the Arm-pits, or else in the Groyns; until that at length Nature shall have driven forth the matter unto some extreame part of the Body: for then the Feaver is wont to cease, albeit the Tumor is wont to stick and continue in the part affected, for a certain space after.

Touthing the Cure, this likewise is to be observed (like as it hath been more at large declared in the place before alleadged) that it ought to be altogether perfected and compleated; and we must use the utmost of our endeavor, that the humor (the containing cause thereof) may be called forth and not retained therein; hste that by the detaining thereof greater evils are wont to be introduced and made way for: which may sufficiently appear even by the example of that Country-man (or Peasant) mentioned by *Gadellmus Fabricius*, in his first Century, Observ. 82. who having an *Erysipelas* in his left Hand (and by the advice of a Barber-Chirurgion for some daies annoyning his Hand and Arm with Oyl of Roses)

a Pain, an Inflammation, and other symptoms were from day to day more and more augmented; insomuch that at length the whole Hand was corrupted (and altogether rendred incurable) by a Gangrene.

### Chap. 8. Of a Bubo:

**A** *Bubo* likewise appertains unto Inflammations. For a *Bubo* (as *Galen* defines it, in his Book of the Difference of Feavers, Chap. 5. and in his second to *Glauco*, Chap. 1.) is an Inflammation of the Glandules in the Groyns. For the Glandules being by Nature ordained and appointed, that unto them the superfluous Humors should be expelled from the principal parts; if they (and together with them the blood) shal chance to be thrust forth altogether (and as it were by heaps) unto the Glandulous parts, then an Inflammation is excited; and this happens most an end, and especially in the Groyns; and sometimes also under the Arm-pit, and behind the Ears; which latter Inflammations behind the Ears are commonly termed *Paronides*.

But now, The Humors that stir up and provoke Nature unto the aforesaid expulsion being very various, hence it is that the differences arising from *Bubo* are likewise exceeding various and different. For one while the Humors are said to be simply vitious or vitiated, so that they have no malignity conjoynd with them; and from these originally proceed those *Buboes* that are not malignant: but then again (otherwhiles) the matter is malignant, and thence the malignant *Bubo* is produced; and this again according to the variety of the malignant matter, is either pestilent, or else that which we call venereal. But in regard that we have already treated of the Pestilent *Bubo* in our Book of Feavers, and that the other which we call Venereal belongs unto the Tract touching the French Pox, therefore we wil discourse of the *Bubo* at large only, and handle it as it is in the general.

### The Causes.

Now every *Bubo* whatsoever hath its original from a preternatural effusion of the blood into the Glandules in the Groyns, or the Arm-holes; the which notwithstanding hath evermore conjoynd with it some certain vitious and corrupt humor, of what sort soever it be, that excites and stirs up Nature into the aforesaid excretion, or as we usually term it, expulsion. From whence also the antecedent, yea and the external causes likewise which make for the generation of this humor are very various. Notwithstanding the strength of the principall parts is for the most part evermore conjoynd therewith; which expel forth whatsoever is offensive and burdensom unto themselves unto these ignoble parts, and to the Extremities.

Hieronymus



*Hieronymus Fabricius ab Aquapendente* determines, that some kind of *Bubo's* have their beginning and original only from the store of Blood, and that certain of them by the way of expulsion are bred from the vicious blood; and that the other Diseases follow, and are excited at the time and Instant of the *Crisis*.

But in very truth I cannot think that a *Bubo* may be excited from the abundance of blood only, but that it hath evermore conjoynd vicious humors which provoke Nature to the expulsion. This notwithstanding is most true and certain, that one while a *Bubo* doth follow upon another Disease, and is excited by the *Crisis* whether perfect or imperfect; and as soon again, without any other Disease preceding it. For although only those Tumors which follow upon other Diseases may properly be said to be caused by the *Crisis*, yet notwithstanding even those likewise that arise without any other Diseases are excited by Nature in her expulsion of the depraved and burdensome humors.

### The Signs Diagnostick.

The *Bubo* is known by this, to wit, that in the Groyns, or under the Arm-holes there appears a Swelling or Tumor, with a certain kind of renitency or resistance, with a redness of color, and likewise with pain; and for the most part also a gentle Feaver accompanieth it. And this is most certain and sure, if the *Bubo* happen to be by the *Crisis*, that then a Feaver or some other Disease went before, which upon the appearing and breaking forth of the *Bubo* is lessened and abated; and then the signs of a good and hopeful *Crisis* preceded; the which if to be they are absent, then the *Bubo* is to be accounted for symptomatical. And then truly if there appear no signs at all of the Pestilence, or of the French Disease, then it is a single and simple *Bubo*, and not malignant and contagious. But if there be conjoynd the signs of the Plague, the *Bubo* is then to be accounted for malignant and contagious; and evermore *Bubo's* are to be suspected, where the Pestilence invades the Patient. In like manner, if the sick Person be infected with the French Pox (commonly termed likewise the Neopolitane Disease) the *Bubo* is then also to be held for and esteemed Venereal, Malignant and Contagious.

### Prognosticks.

1. *Bubos* that are not malignant, and those likewise that are not contagious, are not in the least dangerous, since that they are resident in the external parts, and are caused by Nature in her expelling forth the vicious and corrupt blood unto the weak and ignoble parts; and especially if they be forthwith suppured, and then opened.

2. But if they belong delayed, and that their

maturation be not speeded, there may be great danger; in regard that they very easily pass and degenerate into dangerous *Fistula's*.

3. Those *Bubo's* that are bred or excited under the Arm-holes are sooner matured, since that they arise from a hotter kind of blood; such as is that which the greater Vessels neer neighboring unto the Heart do extrude and thrust forth; for as much as that part (by reason of the Hearts vicinity) hath more than ordinary heat, which is altogether necessary and requisite for maturation.

4. But *Bubo's* that have their original in the Groyns are longer ere they come to a suppuration; in regard that they are excited by a blood that is less hot and thick; and likewise, because they are situate in a place more remote from the heart, and which is but meanly hot.

5. The slowest of them all in their maturation are those *Bubo's* that are behind the Ears; upon this account, namely that they proceed from a colder kind of matter, and have their residence in a colder place.

6. What we are to think and judge of Pestilential and Venereal *Bubo's* hath been already shewn in its own proper place.

### The Cure.

When a *Bubo* that neither is Pestilent nor Venereal is excited (Nature unburdening her self of that, whatever it be, that is offensive and troublesome unto her and expelling it unto the external ignoble parts) Nature's operation and endeavor is by no means to be hindered, nor the matter to be driven back again unto the internal parts. And first of all, we must duly weigh, whether or no Nature hath excited the *Bubo* by the *Crisis* (and that a perfect one) and that thereupon the sick Person be discharged of the Disease, and that there be present and apparent the signs of a good *Crisis* or judgment; for then in this case (according to *Hippocrates* his Precept, Book 1. Aphorism 20.) there ought nothing to be moved; but the whole business is to be committed to Nature; and means must be endeavored, that either the *Bubo* may be discusled, or else that it may most speedily be matured and brought to a ripeness. But then if in truth the *Bubo* be critical, and that the *Crisis* notwithstanding be an imperfect one, the humor is then yet further to be attracted unto the part affected by the application of Cupping-glasses, or by Medicaments made of Leaven, black Soap, old Hogs grease, the Rosin of the Pine Tree, *Diachylum* with Gums, and such like.

Again, If there be a *Bubo* generated, no other Disease preceding, neither then (as hath been said) is Nature's motion in the least to be impeded. But yet notwithstanding the great abundance of blood is to be lessened by the opening of a Vein; which yet is so to be instituted, that Nature's motion to the part affected may be holpen forward

forward and furthered, rather than hindered. If also (which very often chanceth) vicious Humors shal happen to be conjoynd together with the blood, they ought to be evacuated.

The remaining part of the Cure in all these *Bubos* which are not malignant and contagious is to be ordained and ordered like as in other Inflammations. Yet notwithstanding this one thing is wel to be observed in the first place; because that such Digestives as are administered ought to be of the stronger sort, and more forcible than in other Inflammations; in regard that the Glandules are parts that are more cold than ordinary, and more ignoble than the other, and have not any exquisite sense; we advise therefore, that a Cataplasme be made of Barley meal and Lupines mingled with Honey. Or,

Take the Roots of white Lillies, Marsh-mallows, the wild and spring Cowcumber, of each one ounce: the Leaves of Pellitory of the Wall, and Parsley Leaves, of each an ounce and half: boyl them in Wine unto a softness, and then bruise them well: being thoroughly bruised and passed through an hair sieve, add of the meal of Lupines two ounces: Oyl of Camomile and white Lillies, of each a sufficient quantity, and so make a Cataplasme.

If the Humor be not digested it ought to be converted into Pus, and the *Bubo* is to be maturated or ripened; and this for the most part is the safest course. For unless this be done, as I have often observed, after some short interval of time, a new *Bubo* is wont to arise either in the same or some other part. Now the very same Maturatives that are wont to be propounded and prescribed in an Inflammation are here to take place, and to be made use of.

The Pus or filthy corrupt matter being bred, the Tumor is then to be launced, that so the Pus may most speedily be evacuated; and (the truth is) the section or cutting ought then to be appointed and instituted (in the Groyn) in a transverse or overthwart manner; since that the Tumor being cleansed after this fashion, the skin may the more easily coalesce and come together; because that whilst the Thigh is bending the Skin is united.

The Pus being evacuated and emptied forth the Ulcer is to be made clean, flesh to be generated, and at length the Ulcer is to be shut up with a Cicatrice or Scar as we use to call it.

Touching the Cure of a Pestilential and French *Bubo* we have already spoken in its own proper place.

### Chap. 9. Of the Tumor Furunculus.

There is a certain kind of Tumor neer of kin to an Inflammation, which we term *Furunculus*; but by the Greeks it is named *Dothion*

or *Dothien*; and by the Germans *Blutschwær*; to wit (as *Celsus* defines it in his fifth Book, and Chap. 28.) a little acuminate or sharp-pointed swelling together with an Inflammation and pain; and especially then when it is now already converted into Pus. And it hath its original from a thick and vicious blood (as *Galen* instructs us in his fifth Book of the composition of Medicaments according to the part affected) yet notwithstanding the blood not so burnt and corrupted as in a Carbuncle; the which Nature severing from the rest, expels and drives it forth (as offensive and useles) unto the superficies of the body. And thus the *Furunculus* ariseth in the Skin, and in the fleshy parts that are under the Skin. But there seldom breaks forth one alone, but for the most part many of them break forth together.

But now of these *Furunculus*'s there is a certain difference. For some of them are mild and gentle, which only invade and seize upon the Skin; others of them are malignant, which descend deeper: or otherwise (as *Paulus Aegineta* writes in his fourth Book, Chap. 23.) of *Furunculus*'s, one sort of them is benign and harmless, another kind of them mischievous and dangerous. And then it is truly said to be gentle and dangerles, when it resides only in the Skin; but mischievous and destructive, and not to be cured without great difficulty, whenas its Roots being deeply fixed it breaks out upon the Skin. These *Furunculus*'s are sometimes likewise said to be *Sporadick* (that is, such as here and there privately seize upon, and differently afflict the sick person, when they come not after an ordinary manner) and sometimes also they are Epidemick or Universal.

### Signs Diagnostick.

The Signs of a *Furunculus* are, a smal and inconsiderable Inflammation in the first beginning thereof, and a Pustule or blister by degrees and by little and little growing forth, and still tending towards an acute and sharp point (not exceeding the bigness of a Pigeons Egg) with a certain kind of pain and redness of color, whenas it hath arrived at its state and perfection; which happeneth much about the eighth, ninth, or (at the furthest) the tenth day; and a *Furunculus* differs from an Inflammation in respect of its smallness in dimension: and then again, the matter which is in a *Phlegmone* or Inflammation is good blood; whereas in a *Furunculus* it is thick and vicious: and from a Carbuncle it differs, in that the matter of a Carbuncle is worse and more adust or burnt, and thereupon attains not unto a suppuration; whereas a *Furunculus* may attain unto maturation, and may be suppurated.

If the *Furunculus* be Epidemick and Pestilential, it is then black and green; and there is present to accompany it a malignant Feaver, together with other evil symptoms.

## The Prognosticks.

1. In a *Furunculus* (as *Celsus* gives us to understand in his fifth Book, and Chap. 28.) there is little or no danger at all, yea, even although there be no means made use of for the cure thereof. For why it waxeth ripe, and attains unto a maturation of its own accord, and so breaks forth. But the pain accompanying it causeth us the rather to put fitting remedies and medicines in practice, that so the Patient may the more speedily be freed therefrom.

2. Among these Tubercles or little Swellings, they of them are the more hopeful, and least to be feared, which bunch forth externally in the outward Skin, and are sharp-pointed, and equally mature and wax ripe, and are not hard, neither divided and cleft in two parts; or such as have their tendency downwards. For so saith *Hippocrates* in the sixth of his Epidemics, and first Section.

## The Cure.

We must use our utmost Skil and endeavor, that so the matter that is the cause of the *Furunculus* may be most speedily turned into Pus; for which end and purpose those Medicaments that have been already described and propounded in an Inflammation are here likewise very requisite and necessary. Now those things that convert the matter into Pus or purulent matter, are, Wheat masticated and imposed upon the place, Raisons of the Sun, Figs bruised and laid upon the part, and *Diachylum* simple or without Gums. Or,

Take of Linseed meal, powder of Marsh-mallows roots, of each half an ounce; of dried fat Figs in number four; Raisons of the Sun stoned an ounce: boyl them all, and then add of fresh or unsalted Butter two ounces; make therewith a Cataplasim. Or, if the pain be more vehement and violent,

Take Roots of white Lillies one ounce; the leaves of Mallows and violets, of each a large handful: boyl them to a softness, and pass them through an hair sieve; then add of Barley meal, Wheaten meal, and flour of Linseed, of each half an ounce; the Yelks of two new laid Eggs, the fat of a Cock, and fresh Butter, of each one ounce; and make a Cataplasim. Or,

Take Turpentine, the marrow of an Hart, the fat of a Calf, the fat of a Goose, Wax, fresh Butter, the best Honey, Oyl of Roses, of each half an ounce; and mingle them for a Cataplasim.

This Tumor when it is matured (unless it break of its own accord) is to be opened: And so soon as it is opened it ought to be cleansed.

Take the juyce of Smallage half an ounce: Barley meal two drams: Frankincense a dram and half: Turpentine one ounce: the Yelk of one Egg, Honey of Roses as much as will suffice:

minge and make them into the form of a Liment.

After it is cleansed, it is to be filled up with flesh, and shut up with a Cicatrice or scar; like as we are wont to do in other Impostumes.

## Chap. 10. Of the Tumor Phyma.

Unto an Inflammation there appertains likewise the Tumor *Phyma*, which (as *Galen* acquaints us in his second Book to *Glaucos*, Chap. 1. and his third Book of the Method of Physick, Chap. 3.) is a Tumor or Swelling of the Glandules, which forthwith is augmented, and hasteneth unto a suppuration.

The place affected are the Glandules.

## The Cause.

The Cause or Humor exciting the *Phyma* is blood; yet not that which is pure, but that which is Phlegmatick; and thereupon the Inflammation is not altogether so great and intense; and this kind of Tumor appertains unto the Inflammation *Oedematodes* (as we usually term it) and appeareth most an end in Children, seldom in Youths, and most rarely in those that are of full age.

## Signs Diagnostick.

It is known by a round Tumor or Swelling, and which is much elevated, little or nothing red, and almost void of pain, and in a glandulous or kernelly part.

## Prognosticks.

1. This kind of Tumor is altogether free from danger; it is likewise instantly augmented; and for the most part it is suppured and healed without the help and assistance of Medicaments.

2. The Cure is more easily accomplished in Children; more difficultly in Youths, and such as are of full growth, and perfect age.

## The Cure.

We must endeavor that it may be suppured with all possible speed. And to this end, Nature attempt and operation is to be furthered all that may be by maturative Medicaments imposed on the part; (of which we have already spoken enough, where we treated of an Inflammation and a *Furunculus*;) which yet notwithstanding in this case, by reason of the coldness both of the part and cause, ought to be somewhat more strong and forcible: Wheat chewed and laid on is here very useful; as likewise Raisons of the Sun stoned; and also the *Diachylum* Plaster, both the simple, and that likewise with Gums. As,

Take powder of the Roots of Marsh-mallows, Wheaten meal, the meal of Lupines, of each one ounce; of dried fat Figs, six in number; Leaven half an ounce: then boyl them; and add thereto



one Onion waſted in the Embers; Oyl of white Lillies as much as wil ſuffice, and ſo make a Caſeaplaſm. Or,

Take Turpentine, the Honey found at the entrance of the Bee-hive, of each one ounce; Ammoniack diſſolved in Vinegar half an ounce; Oyl of white Lillies as much as will ſuffice, and make an Unguent.

For (to tel you the truth) there are ſome that conceive that a *Phyma* is not preſently to be cut and opened ſo ſoon as it is ſuppurated; but they rather are of opinion that an aſſay ſhould be made, that it may appear whether of no the matter may poſſibly be diſſipated and ſcattered by diſcuſſives: and therefore *Galen* in his eighth Book of the faculty of ſimple Medicaments commends Southernwood, Parietary (commonly known by the name of Pellicory of the Wall, and by others likewiſe called Feverfew) Nettles, Maſh-mallow roots, and Ammoniacum ſoftened with Honey: but this happeneth but very ſeldom. And therefore the ſafeſt courſe is, unleſs it break of its own accord, that it be artificially opened; leſt that the long detaining of the matter ſhould cauſe and produce much danger.

### Chap. 11. Of the Tumor Phygethlon.

**I**N the ſelf ſame Glandulous parts of the Body there is likewiſe another kind of Tumor excited, which the Greeks name *Phygethlon*; but the Latineſcal it *Panus*, or rather (as *Ceſus* in his fifth Book, and Chap. 28.) *Panis*, from the ſimilitude and reſemblance of its figure. But here the cauſe is more hot; and like as *Phyma* hath its original from pituitous or flegmatick blood; ſo a *Phygethlon* or *Panis* hath its riſe from cholerick blood; as *Galen* inſtructs us, in his ſecond Book to *Glauco*, Chap. 1. But moſt an end this kind of Tumor chanceth after Feavers; or elſe after the pains of ſome one or other part; and chiefly thoſe torturing pains which invade and afflict the belly.

#### The Signs Diagnostick.

The Signs of a *Phygethlon* are, a Tumor or Swelling, hardneſs, heat, diſtenſion, and greater pain than might probably be expected in regard and reference unto the magnitude of the dimenſion of the Tumor. There is likewiſe ſometimes a Fever to accompany it. But very frequently notwithstanding there is not any one of al the aforeſaid perceived outwardly (to wit, when and where the matter lieth deeper rooted, and is there kept concealed) but only at leaſt ſome certain prickings are inwardly perceived. This ſort of Tumor is long ere it come to a maturation; neither is it ſitly and properly converted into *Pus*.

### Prognosticks.

1. That *Phygethlon* which becomes not more hard than ordinary al on a ſudden, and which albeit it waxeth not red is yet notwithstanding (otherwiſe) of a changed color, this *Phygethlon* (I ſay) is of the better ſort, and there is little of danger in it. Thus *Ceſus* in his fifth Book, Chap. 28.

2. That *Panus* which ariſeth from an Ulcer, Pain, ſtroke, or from any external cauſe, is altogether void of danger. But that which follows upon Feavers (like as it is eſpecially wont to fall out in a Peſtilential and contagious ſeaſon) or elſe proceeds from Swellings either under the Arm-pits, or in the Neck, is the worſt and moſt dangerous ſpecies of this Tumor. And ſo *Paulus Aegineta* in his fourth Book, Chap. 22.

#### The Cure.

If a *Phygethlon* ſhal happen to ariſe from an Ulcer, pain, contuſion, or ſtripes, or from any other Procatartick cauſe, then (like as in other Inflammations) its increment and growth is to be impeded by coolers and Repellers. But if it be in Feavers; or that otherwiſe it be excited from ſome internal proviſion and ſtoring up of Humors, then in this caſe Repellers have not any place allowed them; neither are they at al to be made uſe of; but thoſe Medicaments that diſcuſs and reſolve are alone to be adminiſtered; and if the matter have any thing of hardneſs in it, then ſofteners are therewithal to be added; ſuch as are Maſh-mallows, common Mallows, Orach, Chick-weed, Parietary, dried Figs, Ammoniack.

But if the matter cannot be diſcuſſed, then we ought to uſe our utmoſt endeavor that it may be maturated, i.e. brought to a ripeneſs, and turned into *Pus*, by the application of thoſe Medicaments that have hitherto been propounded. And at length, unleſs it be opened of its own accord, the Impoſtume is otherwiſe to be broken and opened.

### Chap. 12. Of the Tumor Parotis.

**U**Nto the Inflammations of the Glandules appertaineth likewiſe *Parotis*, a Tumor ſo called from the Greek words *Para* and *otos*, becauſe its ſituation is nigh unto the Ears. *Hippocrates* in the ſixth of his Epidemics, Comment. fifth, Title firſt, and elſewhere, terms theſe Tumors *Eparmata*. For a *Parotis* is an Inflammation of the Glandules neer unto the Ears.

#### The Cauſes.

Whereas then that a *Parotis* is an Inflammation, it muſt neceſſarily follow that the neereſt and containing canle thereof is the blood. But this blood notwithstanding is very ſeldom pure, but moſt an end Choler, Phlegm, or Melancholy, yet oftentimes

oftentimes also there are malignant and pestilential humors therewith mingled; from whence it is, that there are malignant and pestilent *Parotides* proceeding therefrom. And it is a most rare thing that blood that is faulty in nothing but that there is too great store thereof should stir up and provoke Nature so far forth that it should attempt such a kind of excretion or separation; but it happeneth from the vicious and depraved Humors, by which Nature being irritated and stirred up is wont to thrust forth unto the external parts such like Humors together with the blood. For like as in critical bleedings (which Physicians usually term *Hemorrhages*) it is not the blood alone that is principally faulty and peccant, but likewise the vicious humors; the which when that Nature cannot easily expel without the blood, she thereupon assays and institutes this Excretion, or (as we commonly term it) separation of the blood; and this she doth in such a manner (to the end that she may avert and turn away the vicious humors from the principal unto the more ignoble parts) that she makes use of the blood, like as of a Vehicle or Conduit pipe. Now these humors are transmitted and sent either from the whole body, or at least from the Brain. And in good truth we have discovered that these kind of Tumors which we call *Parotides* may not only happen from vicious Humors bred in the body; but also from poysons that shal by any accident be drunk or taken into the body; as (for instance) I remember the like done here at *Wittenberg*. For a certain Servant Maid (when she was to boyl fish) unwillingly drawing water out of Vessels into which a Bat or Dormouse had accidentally fallen, and was therein suffocated and choked by the water, and boyling the fish therein; there were (if my memory fail me not) ten Students that together with their Hostels fell sick; and some of them died. And for those of them that recovered (in two of them at least) even these *Parotides* brake forth behind the Ears.

### The Differences.

The principal Differences of these *Parotides* are taken from the matter, and from the manner of their Generation. From the matter, because that the blood which exciteth the *Parotis* is either Choleric, or Phlegmatick, or Melancholick, or in regard also that it hath malignant and pestilential humors mingled together with them. From the manner of their beginning or generation, in regard that some of them have their original without Fevers, or (as *Celsus* speaks in his sixth Book, and Chap. 16.) some of them in good and perfect health, Nature thrusting forth unto those places some certain vicious humors either from out the whole body in general, or else more particularly and principally from the head: but then others of them appear upon Fevers; and those again such as are either long, or acute; and lastly,

such as are either benign and inoffensive, or otherwise malignant and pestilential. And this happeneth in the state or declination thereof, Nature by the *Crisis* driving forth the digested humor (the cause of the Fever) unto these more ignoble places; or else they arise symptomatically in the very beginning or augmentation of Fevers.

### Signs Diagnostick.

These *Parotides* are known from the place affected, from the swelling, the pain, and for the most part from the redness that appeareth behind the Ears. But then what kind of Humor it is that is mingled with the blood is known out of the several signs of the Humors that have been elsewhere propounded. If there be present a malignant or pestilential humor, then there is evermore conjoynd therewith a Fever of the like Nature. If it be only transmitted from the Head, then there are not present any signs of a *Cachymy* throughout the whole body; and there went before a pain of the head, the which upon the breaking forth of the *Parotis* either altogether vanisheth, or at least is in great part diminished. Now whether the eruption or breaking forth of it be critical or symptomatical, the time of the Disease, and the signs of the *Crisis* (whether they be present or absent) will sufficiently instruct us.

### Prognosticks.

1. These *Parotides* that have their being without a Fever are less malignant, and have less of danger in them than those that have a Fever to accompany them.

2. They also are less dangerous which follow upon Fevers of a long duration, than those that ensue upon acute Fevers; and especially if they be malignant and pestilential.

3. Those of them likewise that break forth critically are more safe and hopeful, more easily cured, and such as free the sick persons from danger. But as for those of them that happen in the end of the disease, after other evacuations, without any remission or abatement of the symptoms, and together with a great debility of the Natural powers and strength of the body, these are very dangerous and pernicious.

4. As for those of them that break forth and shew themselves symptomatically, and have their original from crude and extremely opposite and (as I may so say) rebellious matter, these evermore prove to be pertinacious, i.e. resisting all good means that shal be used; and they alwaies make much work and business both for Nature and the experienced Physician; and wial they cast the Patient into an extream hazard, and the greatest dangers that may be. For why? they are in a place very nigh unto the Brain, from the which both humors and vapors may easily be

communicated unto the Brain, and to its Membranes; from whence an Inflammation of those parts, and dotage or madness may be excited.

5. Those *Parotides* which being bred at the very instant of the *Crisis* shal not be suppurated, but before ever they are suppurated shal vanish, they wil return, get growth, and so become to be judged according to the manner, and upon the account of their return; even as are the returns of Feavers into the like circuit. But there may notwithstanding be some kind of hope left, that some *Impostumes* may arise in the very Joynts themselves. Thus *Hippocrates* in the sixth of his *Epidem. Comment. 4. text. 1.*

### The Cure.

In the Cure of the *Parotides*, we ought in the first place wel to consider, whether they be critical or symptomatic; and what kind of Humor it is that they are bred of, and from which they proceed. If the *Parotis* break forth critically, and so the disease from thenceforth be quite taken away, or at least diminished; then the whol work is to be committed to Nature (according to the Precept of *Hippocrates* in his first Book, and the twentieth Aphorism) and nothing else is then to be done, but only that those things that mitigate pain (as they have been already propounded in the Chapter of an Inflammation) be laid thereupon; the which may likewise at one and the same instant together help forward the suppuration. But then it must not be forgotten that in the *Parotides*, whether they be critical or symptomatic; whether the matter be much or little; and whether it be benign or malignant; that however it be, yet Repellers or drivers back have no place at all (as *Galen* teacheth us in his third Book of the Composition of Medicaments according to the place affected, and second Chapter) lest that the matter be driven back from the more ignoble part unto that which is more noble, and especially the Brain that lieth so neer thereunto. Yea moreover, if the Tumor break not forth sufficiently, and the humor (that by reason of the disease falls and settles itself in the affected part) be not by the vigor of Nature in a sufficient abundance thrust forth, then in this case the gentler sort of Attractives (such as are, the Oyl of Camomile, of Flower-de-luce, of Dill, and of Melilot) are to be made use of. But then the stronger sort of them are not to be administr'd but with an especial care and caution; lest that the pain should be increased, and the Natural powers and strength decreased.

After this we are to take notice, whether or no Nature attempt any resolution and discussion; for which purpose she is to be assisted and furthered by discutient Medicaments; or else, whether (which indeed is alwaies far more commodious) it tends toward a suppuration; and in this case

likewise Nature her self is to be aided and holpen forward by those Medicaments that promote concoction and digestion of the crude matter. Now the Medicaments of either sort are before propounded (in Chap. 5.) where we treated of an Inflammation, and in the eighth Chapter where we discoursed concerning *Bubo*.

The suppuration being made and past, the *Impostume* is then to be opened, and (as we have already in its proper place declared) so to be cured.

In the *Parotides* that are Symptomatical Natures endeavor (where it falls short) is to be furthered and promoted; and the overgreat abundance of the antecedent cause (if any such thing be present) is to be lessened and abated. For if that there be present either an abundant store of blood, or else of vitious and naughty humors, we are not to fear that hereby Nature may be averted from, and hindred in her work of expulsion; but rather to expect that being eased of some part of her burden she will afterwards the more easily expel that which remains and ought to be emptied forth.

If yet notwithstanding (an evacuation of the antecedent cause preceding) she be not as yet able as she ought sufficiently to expel; then the expulsion is to be forwarded and holpen on by the application of Cupping-glasses, and other attractives.

And hence it is, that either a discussion of the matter, or (which indeed we usually practise, as most requisite) the conversion thereof into Pus or matter is to be procured by those of such like Medicaments as are propounded in the eighth Chapter where we treated of the *Bubo Tumor*. And yet notwithstanding here in this case the condition of the matter is to be heedfully regarded; so that if it be more than ordinarily cold and thick the Discussers that we use are to be proportionably hotter and stronger; and if there be any cause to fear that the matter may be hardened, Emollients are likewise to be made use of.

After the softening of the matter, as aforesaid, (albeit otherwise the matter tend likewise thereunto) a suppuration is by all means to be promoted and furthered, the *Impostume* to be opened; and as we have already often declared, in this manner the Cure is to be effected.

Neither is it to be expected that this Tumor should be broken of its own accord, nor are we to wait til then, forasmuch as the Pus being long retained is oftentimes wont to produce many sad and dangerous symptoms. And *Gulielmus Fabricius* in his second Century, Observ. 39. relateth that he had observed, that in a certain young Maiden (while she was afflicted with the *Parotis* we are now speaking of, and yet notwithstanding was not so far amiss and ill as to take her bed, being all the while free from any Fever) much about the fourteenth day of the Disease an *Impostume* likewise to the bigness of ones fist appeared forth



Orth; the which said Impostume being not timely opened, the Girl thereupon was suddenly surprized with a Fever, Swooning fits, Vomiting, and Qualms, together with the loss of rest and sleep, and miserably afflicted with a pain in her Back and Reins; and albeit the Impostume was afterward of its own accord broken, yet notwithstanding in regard that very little or no Pus at all flowed forth, but rather sought its way and passage downward, it was not long ere it cost her her life.

### Chap. 13. Of a Carbuncle.

A Carbuncle hath very neer alliance with, and thereupon is by the most reckoned up and in order placed next after an Inflammation; as a Tumor that hath its original from Blood over hot, burnt, and corrupted. But now this same Tumor hath divers Names or Appellations. By the Greeks it is termed *Anthrax*; by the Latines, *Carbo* and *Carbunculus*: *Avicenna* calls it *Pruna*, and *Ignis Persicus*, or the Persian fire. By which several words & names although some there be who conceive that several and different Tumors are signified, and thereby to be understood; and thereupon have treated of *Pruna* and *Ignis Persicus* in peculiar and distinct Chapters; and likewise have handled the Carbuncle and *Anthrax* as distinct from them, and also as differing each from the other; yet notwithstanding the very Truth is, that by all those aforesaid appellations one only kind of Tumor is signified; for that which with the Greeks is *Anthrax* with the Latines is *Carbunculus*, a Carbuncle, or Fire-coal. Unless any one will make this distinction out of *Avicenna*, that what beginneth without pustules and humidity is a Carbuncle or *Pruna*; but that which beginneth with pustules, and bladders, and that likewise hath a moisture flowing out of it, this may be called *Ignis Persicus*.

Now this Swelling is called by this name, in regard that it hath over it a certain Crustiness that is black like a Coal; for which cause it is also termed *Pruna*, because the Flesh is black, and as it were burnt with a Coal; and moreover it is said to be a Fire, in regard that the parts are burnt as by a Fire. But in truth, that which *Celsus* and *Pliny* have left written touching a Carbuncle seems yet scarcely in all things to answer to a Carbuncle in general, but only to some one species thereof; and haply unto a kind thereof that is Epidemical, and so a new Disease. For *Celsus* in his fifth Book, Chap. 28 thus writeth: *From those that befall extrinsically we must now come unto such things as are internally bred, some one part or other of their Bodies being corrupted. Among which there is none worse than a Carbuncle: of this Carbuncle there are these Notes and Marks; there is a certain redness, and upon it there stand and hang out (but not very far) certain Pusles or Pustules, especially such as*

*are black, and sometimes black and blewish or Lead-colour'd, or Pale. In these there seems to be a rottenness and filth; beneath the colour is black: the Body it self is dry, and more hard than it ought to be. About the which said Carbuncle there is as it were a Crust, and this is surrounded by an Inflammation, neither can the Skin in that place be possibly lift up, but it is as it were fixed and close fastned unto the Flesh underneath it. The sick Person is extream sleepy; and sometimes there ariseth a certain kind of horror, or else a Fever, or both. And this Evil creepeth along, there being drawn out as it were certain roots, sometimes more speedily, and sometimes more slowly: and likewise above when it first proceedeth forth it looketh of a whitish colour, and then instantly it becometh Lead-coloured; and about it there arise little Pusles or Pustules. And if it happen to light upon the part neer the Stomack, and the Jaws, it then oftentimes suddenly stoppeth the Breath: thus far *Celsus*. But now *Pliny* (in his Book 26. Chap. 1. in which he treateth of Diseases that were new and unknown in all former ages) thus writeth: *It is recorded in the Annals that the Carbuncle (the peculiar Malady of the Province of Narbone) came first into Italy, L. Paulus and Q. Marcus being Consuls: of which the same year two that had been Consuls (Julius Rufus, and Q. Lecanius Bassus) died; the former of them through the unskilfulness of the Physicians being cut; & the latter, behimself having put a Needle into the Thumb of his left Hand which being drawn forth the Wound was so small that it was scarcely to be discerned. It is bred in the most occult and hidden parts of the Body, and for the most part under the Tongue; it hath a reddish hardness (like unto the Varix or crooked Vein) but black in the head of it, & elsewhere blewish or Lead-coloured, distending the Body, yet not swelling up, without pain, without itching, without any other sign or token (whereby it may be known) then an extraordinary propension to sleep; and those that have been surprized herewith, it hath taken them away in three daies time; and sometimes bringing along with it a certain horror; it hath round about it small Pustules, but very seldom is there any Fever attending it; and when it invadeth the Stomack and the Jaws, it soon killeth. Thus *Pliny*. Now whosoever shall well weigh what he hath written shall easily perceive that he here describeth some other Disease, or at the least a Disease that hath in it some thing peculiar and differing from the ordinary Carbuncle, and ending in a Gangrene and Sphacelus.**

*Pliny Expressly referreth it unto Diseases new and never known before, and writeth likewise that they arise in the most hidden parts of the Body, and for the most part under the Tongue; that it is without pain, without itching, without any other symptoms then sleep; with which such as are surprized are deprived of life in three daies time*

time, no swelling at all appearing. But now *Celsus* writes, that it sometimes ariseth also without a Feaver, and that it befalleth those parts that are about the Stomack and the Jaws: whereas the ordinary and common Carbuncles arise in the outward parts of the Body, and have a grievous pain joynd therewithall; they likewise invade the Parry with a Feaver, and the place affected hath likewise accompanying it a manifest Swelling.

*What a Carbuncle is.*

But that we may again return unto the Carbuncle that is commonly known among Tumors or Swellings; it is a Swelling that bath its original from a most fervent and adust blood that corrupteth the parts.

### The Causes.

The Concreting Cause of a Carbuncle (according to the assertion even of *Galen* himself, in his Book of Tumors, Chap. 6. and in his second to *Glauco*, Chap. 1. and his 14. of the Method of Physick, Chap. 10) is a blood fervently hot, and thick, which (in his Book of black Choler, Chap. 4. and 5.) he affirmeth to be black Choler. To wit (as we may gather out of his second Book of the Differences of Feavers, Chap. 19.) a Carbuncle ariseth from a fervent thick Blood, putrifying, and degenerating into the Nature of black Choler, or having black Choler mingled with it, and for the most part a certain malignity conjoynd therewithal. This Swelling although it may be generated in the Body by little and little, and by degrees assume this ill and depraved Nature; yet notwithstanding when it hath gotten any degree of the said pravity and malignity, it is then by Nature instantly and suddenly driven forth from the interior unto the exterior parts, that is to say, from the more noble members unto those that are less noble and worthy. Which likewise happeneth when the Blood is infected and corrupted by reason of some external Corruption; from whence it is, that a Carbuncle is never excited by the Congestion or heaping up of blood; but is evermore generated by a defluxion that is at once made: and thereupon it is deservedly accounted among Inflammations, and is said to be very neer neighboring unto a *Phlegmone* or *Inflammation*. Neither is it only generated of black Choler, like as a Cancer, but it is bred by adust and burnt blood, degenerating into black Choler, or else having black Choler mingled therewith.

Now the aforesaid adust blood is generated from an ill and unwholsom course of Diet, and from meats of a depraved and vicious quality affording and supplying the whol matter of all the blood. And this is likewise much more promoted and furthered by the external Constitution of the Air, overheating, burning, and corrupting the humors, and especially its occult and malignant

Constitution depraving the humors: and indeed there is hardly any Carbuncle to be found that is altogether void of, and free from malignity.

### The Differences.

Yet notwithstanding in regard that this Malignity is sometimes greater, and sometimes less, and that some Carbuncles invade very many in a Pestilent constitution of the Air, and others again here and there seize upon the sick without any such pestilent constitution of the Air; Carbuncles therefore are to be distinguished into Pestilent, and not Pestilent. Moreover some of them arise with a Pustule, or with such Pustules as are caused and raised by the fire, which if they be broken, there lieth underneath within a Crusty Ulcer (and this happeneth if not alwaies, yet for the most part) and such as these are in special by *Avicenna* called *Pruna*, or *Ignis Persicus*: Others of them arise and appear without Pustules.

### Signs Diagnostick.

The Carbuncle beginneth (as hath been said) for the most part from a smal Pustule; but sometimes there is not only one of the greater Pustules breaking forth, but likewise many smal ones, like Miller seeds, rising and appearing very thick in the part; which when they are broken, the Ulcer becometh crusty, such as is excited by a red-hot Iron. But before these Pustules break forth there is a certain itching felt in the part, and thereby there is one or more Pustules arising and appearing: yet notwithstanding the Carbuncle sometimes beginneth without any manner of Pustule, and a crusty Ulcer is excited, the crustiness being one while somewhat blackish, another while having in it the resemblance of the color of Ashes; and then again in a very short space after it groweth forth, and becometh like unto Bubo's, after a round acute figure, with an extraordinary great heat, burning and pain; al which are especially exasperated about the Evening; and then they so vex the sick party that he can hardly withhold his hands, but that he must be rubbing of the part; from which rubbing there afterward arise very many of the aforesaid Pustules. The flesh that lieth round about them waxeth hot, and hath in it at the height an extream great and burning heat; it likewise obtaineth a color somewhat blacker than is that in an Erysipelas and a Phlegmone, like as if there were something of black choler mingled together with the red. There happen moreover other Symptoms besides the former, to wit, a Feaver, which (as *Galen* also testifieth in his fourteenth Book of the Method of Physick, Chap. 10.) infecteth those that are surprized with a Carbuncle, more than those that are affected with a Phlegmone or Erysipelas; a nauousness likewise, a vomiting, a dejection of the Appetite, a trembling with a panting and beating of the heart, frequent

frequent faintings and swoondings, dotage; all which said symptoms do so much the more afflict and grieve the party, by how much the matter is the more malignant.

For there is a certain difference even of those Carbuncles themselves, not only in regard that with the aforesaid adust blood (which is the conjunct cause of the Carbuncle) there is sometimes this, another while that humor mingled; but more especially, in that one Carbuncle is Pestilent, and another not Pestilent. For albeit every Carbuncle be malignant, by reason of the hot Matter, being adust and putrefying (which hath in it a power and quality to corrupt the flesh, and cannot well return into any more benign or better nature; neither may it well be suppured:) yet notwithstanding every of them is not Pestilent; neither hath every of them any adventitious Malignity, but sometimes only besides the Native malignity of the Carbuncle there chanceth likewise another kind of malignity from the common state, or the contagion of the Air. But now a Pestilent Carbuncle is discerned from that that is not Pestilent, first of all by the present Pestilent constitution of the Air. For it is hardly possible that a Carbuncle should arise at such time as the said Pestilent Constitution is predominant, which in it self should not be Pestilent. Moreover all the symptoms and signs that appear in the Carbuncle are both more frequent, and more grievous in a Pestilent Carbuncle, than in a Carbuncle that is not pestilent. For even the Fever also which is adjoynd unto the Carbuncle resembleth and carrieth along with it a Pestilent nature; and although it seem outwardly to be more moderate and gentle than that which appeareth in the Carbuncle that is not Pestilent (yea, sometimes so that it can hardly be perceived) yet notwithstanding at that very time it the more burneth the inward parts, and is by far the more dangerous: the fresh color of the face is changed, the tongue becometh black, and is dry; the excrements of the Belly are liquid and cholerick, the appetite is dejected; there is likewise present a nauseousness, and a vomiting of the most offensive and the worst humors; a difficulty of breathing, a stinking breath; and there is also much sweat, and this is either somewhat hot, or else (as we term it) a cold sweat. The sleep is sometimes very sound, and sometimes watchings infect the sick party; dotings also accompany the same, as likewise faintings and swooning fits. And hereupon it is that there is more danger threatened by one Carbuncle, than there is by another. For although every Carbuncle be not pernicious; yet notwithstanding (as *Galen* testifieth in the 3. of his *Epidem. Comment.* 3. tit. 2.) the most pernicious of all is the Pestilent, or that which besides its own proper and particular malignity hath also adjoynd with it that which the constitution of the Air bringeth along with it, and which is at-

tended with all those pernicious symptoms: which if they remit very much of their former intenseness and vigor, there is then left remaining some hope of safety and recovery; but if from day to day they are heightened and become more vehement, there is then no safety or hopes of escape to be expected.

### *The Prognosticks.*

1. By how much the blacker the Carbuncle is, by so much the worse is it, as being such as is produced by the most corrupt blood. The next unto this is the wan and yellowish. Those that are less malignant, and consequently the less to be feared, are such as have in them a reddish color; to wit, such in which the blood hath not as yet altogether lost and changed its Nature, but that it hath as yet retained somewhat of its native heat and color.

2. Those Carbuncles likewise that are small are less pernicious than those that are great; and from a very little Pustule they suddenly acquire and get an extraordinary greatness.

3. And so are likewise those that are alone, than such as have other Carbuncles conjoynd with them.

4. Of all other those are most destructive and deadly, which after they have once begun to wax red do immediately vanish again. For the matter being transferred unto the more inward parts often (if not evermore) proveth destructive and deadly.

5. There are some also who conceive that this is likewise thoroughly to be considered, to wit, Whether the Pestilent Carbuncle arise before the Fever, or else whether or no the Pestilent Fever going before it at length break forth. For they conceive that the Carbuncle that breaketh forth before a Pestilent Fever is more safe (provided that no Symptoms follow thereupon) in regard it is an evidence that Nature is strong, and able to expel the Pestilent Poyson before the Fever, ere ever it can seize and surprize the heart. And (on the other side) that to be more dangerous which at length breaketh forth after a Pestilent Fever, forasmuch as (the Heart being seized upon) it hath its original from the poyson and the corrupt humors now diffusing themselves into all parts of the body.

6. The place also manifesteth when the danger is more or less to be feared. For those are evermore accounted evil and pernicious that stick fast in the Emunctories, and neer unto the Noble and Principal Members. But here most especially the strength and natural powers are to be regarded; and we are well to consider whether they be strong, or else but weak. For that strength that is but weak and languishing may be soon overpowered and vanquished even by a small Disease. Whereas (on the contrary) that that is more vigorous oftentimes overcometh and masters even that



that disease that in it self is strong and powerful.

### *The Indications.*

The Indications in a Pestilent Carbuncle are different from those in a Carbuncle not pestilent. In a Pestilent Carbo or Carbuncle the fervent heat of the blood is wholly al the body over to be restrained; and wishal, the Heart at the same time is to be fortified against that malignity, which (as we have said) is here very seldom absent. The rest of the Cure is to be directed unto the Carbuncle it self. But now in a Pestilent Carbuncle there is a more poysonous and pestilent quality appearing than in the fervent heat of the blood; yet neither is this to be sleighted or neglected.

### *The Cure.*

And therefore (as to what belongeth unto the Cure of a Carbuncle) there are two things that we are especially to regard and have an eye unto; the Antecedent Cause, or the fervent and corrupt blood that is in the whol body; and the Conjunct Cause, or that same Humor that now exciteeth the Carbuncle. A convenient Diet therefore being ordained, and a moderation observed in those things we cal nor natural, the extreame fervent heat of the blood is by opening a Vein to be taken away. And yet this Venesection is not rashly to be made use of in al manner of Carbuncles; but if it hath any place at al, it is most chiefly in that that is not pestilent; touching which likewise that assertion of *Galen* (in his fourteenth Book of the Method of Physick) and of other Authors (who conceive that the blood is to be drawn forth even until the sick person faint and swoon) is to be understood. But in a pestilent Carbuncle nothing is rashly to be attempted, that may weaken and deject the Natural powers, (of which there ought to be the most special regard had in the plague, and in pestilent Feavers) amongst the which Venesection unto fainting and swoounding is not the last (but rather the first) which together with the Spirits evacuateth that humor that is most agreeable and friendly to Nature, and even that most excellent and precious Treasury of the life. Nay indeed moreover, even sometimes when the pestilent Carbuncle is just then breaking forth, we cannot safely enough institute and ordain Phlebotomy. For whereas the Carbuncle sometimes breaketh forth, not instantly upon the very first invasion of the Plague, and pestilential Feavers, but often afterward on the fourth daies (or haply on some other daies) the Natural powers wil not then bear the said Venesection, in regard that they are now dejected by the disease, and have therefore entered the Lists, & are now conflicting with the said disease. But now what Veins are to be opened, sufficiently appeareth from that which we have spoken above,

touching the evacuation of the blood, & touching Revulsion, and Derivation, in the Cure of an Inflammation. This only is here to be observed, that we must beware, lest that whilst we evacuate the blood, we do not lead and draw the same either unto any noble Member, or else through any noble Member, lest that the said Member should be affected with its malignity.

And therefore we say that that Veins to be opened, by means whereof the blood may rather be drawn toward the part affected than drawn back from it. Wherefore if the Carbuncle shal be about the Head, or the Arm-holes, or in the Breast, the neereſt Vein in the Arm of the same side is then to be opened. But if it be below the Liver, then the Ankle Vein, or the Ham Vein of the same side. And this Phlebotomy ought to be put in practice instantly, and in the very beginning, before the Feaver get strength, and the Natural vigor be too much dejected.

But now in regard that by this blood-letting the naughty corrupt humors can scarcely be evacuated, therefore some conceive that there is need of purgation, by which the said depraved humors may be evacuated, lest otherwise the Native heat should be suffocated and extinguished by them; and that Nature may afterward the more rightly moderate the expulsion; and that so the part affected may not be corrupted by the great abundance of the Humor flowing thereto.

But then we ought to be extraordinary careful, lest that by the purging Medicament, the Humor that Nature endeavoreth to thrust forth unto the external parts be drawn unto the internal: and this is most of al to be feared in a pestilent Carbuncle. We conceive indeed that it may more safely be ordained and appointed in a Carbuncle that is not malignant. But when a Feaver is therewith joyned (and that an acute one) the crudity of the matter then for the most part forbids it; and to speak truth, there is hardly a Carbuncle to be found in which there is not something of malignity; and therefore the malignant matter is with more safety thrust forth unto the superficies of the body by those Medicaments we term *Alexipharmaca*, then drawn to the more inward parts by Medicaments that purge.

That fervent heat also of the aduſt blood is to be altered; and the malignity to be opposed by convenient Medicaments, as the juyce of Citron, of Pomegranates, Sorrel, Borrage, Bugloſs, Water Germander, Succory, and the like; with which (in a pestilent Carbuncle) other *Alexipharmaca* may also be fitly mingled. As,

Take *Conserve of Sorrel, Borrage, Bugloſs*, of each one ounce and half; the species of *Diamargaritis frigid.* Confection of *Hyacinth*, *Elect. de Gem.* of each half a dram; of candied Citron rind six drams; the candied roots of *Scorzonera* (or *Vipers Graſs*) half an ounce; with the juyce of Citron make an *Electuary*.

Unto which (in a Pestilent Carbuncle) we may add Bole-armenick, *Terra Sigillata* or sealed Earth, Harts horn, Bezoar stone, and the like. Very many there be that in a Carbuncle do much commend *Scabious*, and they conceive that it never ought to be passed by; and they write, that either the Juyce, or the Water, or the Decoction thereof, is of singular use and benefit in a Carbuncle.

It wil not likewise be amiss to fence and guard the Heart with Topicks, by Epichems that are otherwise known, applied to the Region of the Heart and the Pulles; that so by all manner of means the Heart may be preserved safe and sound from all the malignity.

Afterward (as for what concerns the conjunct cause, or the Tumor it self) the way and means of curing a Carbuncle is not altogether the same as in other Inflammations, unless haply there appear to be in it very little of an offensive quality. Neither must we make use of Repellers (but the malignant and poysonous matter is rather to be attracted from the more inward unto the external parts) unless perhaps they may be administred for the mitigating of the vehemency of the pain; touching which more hereafter. And therefore so soon as Venesection hath been administred, the part affected is forthwith to be scarified, and that likewise with lancing that goe deep enough, that so the corrupt, malignant, and poysonous blood (which unless it be instantly emptied forth of the part affected corrupteth the parts neer adjoyning) may be quite drawn forth. Immediately upon this the part affected is to be cleansed and thoroughly washed with warm salt water, or with some other convenient liquor, lest that the blood should clod, and so grow together in the part. Now if the corrupt blood seem not as yet to be sufficiently evacuated, the scarifications ought then to be repeated. We are likewise allowed (when the place is scarified) to apply thereto Cupping-glasses or Leeches. Yet notwithstanding with great violence the humor flow unto the part, then Attractives may not safely enough be administred, since there is cause to fear, lest that the matter flowing thereto in great abundance, the pain should be made the more vehement; which may (possibly) excite and cause watchings, augment the Fever, and deject the Natural vigor; but rather, if the matter flow thereunto over hastily, and with too great force, we are then to make use of those Medicaments which by moderate repressing and driving back may likewise digest. And such is the following Cataplasme:

Take *Arnogloss* (we commonly term it Lamb-tongue, or Way-bread) Lentiles, Bread that is neither wholly purged from its bran, neither yet such as is altogether branny, of all these a like proportion; let them boyl in Water or Wine, and so make a Cataplasme: which is to be applied twice or thrice every day.

But now this said Medicament that we have mentioned, or such like, is not to be imposed and laid upon the very Carbuncle it self, but only neer about it, some three fingers distance from it. For by this means the malignant matter it self is not driven back, but only the extream heat and pain is mitigated, the flux of matter is somewhat retarded; and hereby is prevented the retreating back again of the matter unto the more inward parts. But yet neither must this be passed over in silence, that it is not evermore requisite to fence the Carbuncle with such a guard: but notwithstanding, this for the most part is necessary, to wit, That that part which hath a neer relation with a noble Member should be wel guarded; forasmuch as it is no way hurtful (but indeed profitable) that some of the matter should be derived and evaporated unto the other ignoble parts.

Moreover, the place being scarified, there are not to be applied those Medicaments that otherwise are wont to be laid on (in regard that they promote and further the Pus or purulent matter, and by this means may encrease the putrefaction and rottenness; since that a Carbuncle in putrefying evermore creepeth and spreadeth so that very often a Mortification chanceth unto such parts; but rather those Medicaments that are drying, and such as resist putrefaction. For which end and purpose we may administer the Pastils, or Formanders, of *Andro*, *Musa*, *Polydas*, and *Pasio*; which are to be dissolved first of all in Wine, and then also, afterward in Vinegar; touching which see *Galen* in his Composition of Medicaments, in general, the fifth Book, Chap. 11, and 12. They commonly likewise make use of the *Egyptiack Unguent*. There may also be made a Cataplasme of the Meal of the Pulse *Orobis* with Oxymel. *Morsus Diaboli* or Devils-bit, is likewise very much commended; if while it is yet green and wel bruised it be laid on; or else boyled in Wine and drunk. There be many likewise that here make use of those things that are experimentally found to be helpful by the propriety of their substance; among which *Scabious* is especially commended, as also *Morsus Diaboli* or Devils-bit; they take (to wit) the *Scabious* whilest it is green, and bruise it wel, and then they add thereto the Yelk of an Egg, Hogs grease that is old, and a little Salt; and herewith they make a Cataplasme; which is often to be renewed. Some likewise take the Herb Comfrey for the same use, and with it they prepare and make such a Medicament as this that followeth:

Take of the Juyce of the greater *Symphitum* (or great Comfrey) *Scabious*, *Crane-bill* (or *Doves-foot*) of each one ounce: of Barley Meal two ounces and an half; and mingle them for a Cataplasme.

Others there are who (if there be present an extream heat and pain) commend this, *Viz.*

Take *Plantane Leaves*, and *Sorrel Leaves*,

of each two handfulls, boyl them to a softness; then let them be bruised; when they are thoroughly bruised, add to them the Yelks of four Eggs, Treacle two drams, Barley meal a sufficient proportion, and so make a Cataplasme.

Many likewise there are that commend those Wallnuts that are old and Oily, being bruised; of the which some make such a Cataplasme as this that followeth.

Take the Kernels of Walnuts (such as are old, and rancid or mouldy) in number three; dried Figs, and Raisins, an equal proportion; boyl them in strong white Wine to a softness, and then bruise them; adding thereto a dram of Salt, and two Yelks of Eggs; mingle, and then make a Cataplasme of them.

But now if there be any that wil not endure Scarification; or if otherwise the Carbuncle wil not yeild unto these Medicaments; and it be so, that the corruption, the blackness, and the signs seem alwaies to be augmented; we must in this case have

recourse unto Cauteries; and that instantly and with all possible speed, for even the least delay may cast the sick

Person into an extreame perill, yea into the greatest danger even of death it self. But here Potential Cauteries may not so safely be administred; in regard that the Crust which is drawn over them falls off more; and so the exhalation of the corrupt and malignant humor is hardened. The Actual is therefore by most accounted the safer. For why, the Actual Cautery, by the heat and driness of the Fire, doth especially resist putrefaction, and preserveth the sound parts, lest that they also should be infected with putridness; and it likewise attracteth from the depth and the very bottom all the malignant and corrupt Matter; and for this cause it is here by the most commended as the most effectual Remedy; who conceive that here (in this case) this is not so grievous a Remedy, seeing that the sick Person is hardly sensible of it, in regard that the Flesh is dead; and because that the use of it must be so long continued, even until in all parts thereof there be a sense of pain. Yet notwithstanding even the Actual Cautery hath also in it this discommodity, that it induceth and causeth a Crust or Eschar, which it self so hindereth that the malignant and poysonous matter cannot exhale. If therefore any will use this Remedy, he must be altogether careful, that the Crust drawn over it hinder not the exhalation of the corrupt and malignant humor; and therupon he must use his endeavor, that the Crust may speedily (even within the space of twenty four hours) be removed; in regard that there may be danger in the delaying thereof. And indeed (for this purpose) they commonly use Butter, the Suet or Fat of a Hog, the Fat of a Goose, and such like moistening and suppurating Remedies. But the Truth is, that *Horatius Augentinus* and *Gulielmus Fabricius* do rightly inform us, that (in those af-

fects in the which there is otherwise so extreame a danger threatned from putridness) these Remedies may not with any safety at all be administred; forasmuch as by their humidity, and Emplastick virtue, they do in a wonderfull manner encrease the putridness, & cause that the rottenness and corruption of the part creep so much the further; and moreover these do but very slowly take away the Crustiness. And therefore these conceive that we ought rather to use those Remedies that do greatly cleanse and dry, resist putrefaction, and break assunder those smal slender fibres by which the Crust adhereth unto the part affected. *Galen* (in his second Book to *Glaucos*, Chap. 9.) doth taking away of the Crust (after burning) in the case of a Gangrene, useth the Juyce of a Leek with Salt. *Gulielmus Fabricius* for the falling off of the Eschar, and for the cleansing of the Ulcer commendeth this following Unguent.

Take the meal of Orobus (or bitter Vetch) the root of Aristolochy, or Birthwort, the Flower-de-luce of Florence, and the lesser vernal Gentian, of each half an ounce; Treacle two drams, with a sufficient quantity of Honey of Roses; and so make an Unguent.

*Horatius Augentinus* commendeth this.

Take Vitriol two drams, the best Honey half an ounce, Hogs grease two drams, and mingle them.

And that the Ancients did not alwaies use moisteners and those Remedies that forward the Pus or Purgent matter, for the removal of the Crusts, is sufficiently evident out of *Galen* his sixth Book of the Composition of Medicaments according to the place affected, Chap. 6. and *Paulus Aegineta* his fourth Book, and Chap. 19. in the which said place there are many more such like Medicaments to be seen.

And as for my own part, I had rather (for the taking away of the Crusts which for the most part the Carbuncle contracteth) use such like Remedies, then Cauteries, whether Potential or Actual. For here the Putridness is not simple, as in a Gangrene, and other corruption of the parts (where that that is putrid is most commonly separated from the sound part; so that we may safely enough burn away what is corrupt and putrid. But in a Carbuncle there is present a malignant humor, and that diffused throughout the whole part; and therefore we are to make use of those Medicaments that extract, that so by this means what is as yet sound may be preserved from putridness and Corruption. *Aetius* writeth, that wild Rue imposed in a Cataplasme with Honey and Raisins of the Sun, doth likewise instantly separate the Crusts of Carbuncles: and therefore even those medicaments also that resist malignity (as Treacle and the like) are for the most part very properly herewith mingled. And therefore we conceive that the Unguent of *Gulielmus Fabricius*, erewhile mentioned, is exceeding profitable



in a Carbuncle, not only after the burning, but likewise at all other times. Others compound such a like medicament, which (as they affirm) will in two daies space separate the good and sound Flesh from the corrupt.

Take Rue one handfull, Leaven one ounce, dry Figs three in number, Pepper a dram, Salt a dram and half; make a Cataplasim which may be applied mornings and evenings.

In general, in Pestilent Carbuncles, to extract the Poyson we must prevent and binder the creeping and further spreading of the putridness.

For the taking off the Scar this Emplaster is principally commended.

Take of the best Treacle, and Mitbridate, of each half an ounce, Leaven and Turpentine of each two ounces, Honey of Roses one ounce and half, fresh Butter two ounces, common Salt one ounce, Chimney Soot two ounces and half, Saracen Soap three ounces, Saffron three drams, three Yelks of Eggs, bakeshem altogether, and make an Emplaster. Or,

Take Scabious, the greater Comfrey, of each two ounces, of ful and fat Figs dried three, an Onion roasted in Embers, Squills half an ounce, Raddish root cut into smal pieces two ounces, two Yelks of Eggs, Salt two ounces, Leaven and Chimney Soot of each one ounce, Honey & Turpentine, of each as much as will suffice; and so make a Cataplasim: and having spread it upon a Linnen Cloath lay it on hot, and let it be shifted almost every hour.

If now we perceive the Crust to become round and a circular redness appearing, it is then a sign & token of ensuing health and recovery, and a manifest testimony that Nature hath now separated the corrupt from the sound. When the Crust is wholly taken away the Ulcer is then to be thoroughly cleansed with Honey of Roses, and the Juice of Smalage, and such like. After the cleansing it is to be filled up, joyned together, and at length with a Cicatrice to be shut up. But touching the cure of a Carbuncle, see more in the fourth Book of Feavers, and the fourth Chapter.

## Chap. 14. Of the Tumor Paronychia.

UNTo Inflammations there also belongeth that Tumor that the Greeks call *Paronychia*, because that it is generated in the Confiner or sides of the Fingers; the Latines term it *Panarium*, the Germans *Der Wurm*, Oder *Das Unge-nante*. For the Vulgar are of Opinion, that in this Tumor there lieth hid a Worm, that by gnawing exciteth and causeth those so great pains; and that when it is mentioned and spoken of it is thereby exasperated, and that therefore it ought not to be so much named: but these things are meerly fabulour.

what a  
Paronychia  
is.

Now a *Paronychia* is a hot Tumor or Swelling, arising from blood adust and atrabiliary in the extreame part of the Fingers, at the sides of the Nails; and by reason of the neighborhood of the Nerves exciting most grievous and intollerable pains.

### The Causes.

For this Tumor hath its original from adust, and (for the most part, likewise) malignant blood; which Nature thrusteth forth unto the Fingers ends; and there it causeth an Inflammation.

### The Signs Diagnostick.

It is known by the Swelling, Redness, and pain, appearing in the Fingers ends about the Nails; together with a most extreame and intense pain (by reason that the neer adjoining Nervous parts are affected) which will not permit the sick Person to sleep, or take any rest, neither night nor day; and this pain (in regard of the Nerves consent) is oftentimes extended throughout the whole Arm; and it hath to accompany it a continuall Fever, and sometimes (by reason of the over-great pain) a Lipothymy, which we term fainting or swoounding.

### Prognosticks.

1. According to the benignity and inoffensiveness of the humor, the malady is sometimes more mild and tollerable, and sometimes again more grievous and intollerable. For if the matter be benign or moderate and favorable, the symptoms are then the less vehement.

2. On the contrary, if the Matter be Malignant, the Malady is dangerous; for it oftentimes so corrupteth the Ligaments and the neighboring Nerves, that the utmost Joynt together with the Bone Impostumeth; and sometimes the whole Finger is corrupted.

### The Cure.

The Vulgar, as they have superstitious Opinions touching the Cause, so they have likewise concerning the Cure of this Tumor. For they think that if any one thus affected shall in the Spring time wash and besmeare his hands with the Eggs otherwise called the seed or Sperm of Frogs, & shall then suffer them to dry leisurely & of their own accord; and shall afterward hold in this Hand that Finger that is grieved with this Inflammation, he shall by this means assuage and qualifie the said Inflammation. And some there be also that every yeer hold in their hand a live Mole; and then having conceived and mumbled over a certain form of words; with squeezing hard they kill the Mole they have in their hand; and then they brag and boast that for the yeer following they are able to kill and destroy all those Worms.

But, to omit these fopperies, the right and due way of Curing this Evil is then taken, when after the general evacuation of the humors by Blood-letting and Purgation hath been premised, in the first place we impose upon the part affected those things that moderate the pain, and mitigate the fervent heat of the humors, and such Medicaments likewise as help forward and further suppuration.

But Repelling and Astringent Remedies are by no means to be imposed upon the grieved part, lest that by this means the humor should be the more impacted into the part, the pain augmented, and the Nerves and Bone corrupted. If yet notwithstanding the Afflux be over great, then let Repellers be laid on very nigh unto the part next above it.

And therefore in the very beginning the following Cataplasim is to be imposed :

Take Barley meal, and Bean meal, of each one ounce ; Camphire one scruple ; the Mucilage of the seed of Fleabane as much as will suffice. Mingle all these with Vinegar over the fire, and so make a Cataplasim. Or,

Take the juyce of Nightshade, of Plantane, of Navelwort, of each half an ounce ; the Mucilage of Fleabane seed extracted with the Water of Nightshade three drams ; Bole armenick half a dram ; Camphire five grains ; Oyl of Roses, and Myrtle, of each half an ounce : Mingle them, &c. Or,

Take the Mucilage of Fleabane seed extracted with the juyce or water of Plantane two ounces ; Bole armenick one dram ; Vinegar half an ounce : Mingle them, &c.

Or else let the white of an Egg mingled with the Oyl of Violets be imposed.

There are likewise commended those little Worms that are found in the middle of the utmost rind of the Teazel or Fullers Thistle, if while they are alive they be bound about the Nails affected.

Where the matter tendeth to Suppuration,

Take the Meal of Fenugreek seed, and Linseed, of each half an ounce ; the Yell of one Egg, fresh Butter one ounce ; the fat of a Hen three drams : Mingle them without fire, and make an Unguent. Or,

Take the Mucilage of the juyce of Fleabane one ounce ; the meal of Linseed and Fenugreek, of each three drams ; the Yell of an Egg ; Saffron one scruple ; the fat of a Hen, and Butter unsalted, of each one ounce ; Mingle them, and make a Cataplasim.

When the Pus is bred, the Impostume is forthwith to be opened, and the Pus or Scur-like filth (being seldom good, but rotten and corrupt) is to be drawn forth. The Pus being thus evacuated such a like Absterfivie and Incarnative is then to be made use of.

Take Aloes Hepatick three drams ; Myrrh,

Frankincense, Sarcocol, of each one dram ; pure and cleer Turpentine half an ounce ; Honey of Roses two drams ; Mingle them, &c.

Gulielmus Fabricius ( in the first Century of his Chirurgical Observations, Observ. 97. ) doth not stay to wait for the Inflammation, or for any notable swelling up, and suppuration ; but in a Woman that was afflicted with a most grievous pain in the end of her finger, together with a Fever, a fainting and swooning, a nauseousness and vomiting, and other symptoms ; he thus ordaineth his Cure. He first of all a little fomenteth the finger with Cows Milk in which Camomil flowers, Melilot flowers, the seeds of Fenugreek and Quinces were first boyled. And then by little and little he dissected the superficies of the Skin. The Skin being shaven away, there appeared small red spots ; which being cut with the edge of a knife, he findeth under the Skin a drop or two of red Water. That being evacuated, he applied a Linnen Cloth dipt and moistened in Aqua vite, in which there was dissolved a little Treacle. By thus doing he soon qualified and quice took away the pain ; and by this one only Remedy the very next day the finger was healed.

And likewise in another Matron, that for three daies together by reason of the vehement pain of the Paronychia could not sleep, nor take any rest at all ( the skin being shaven off ) he findeth under the skin in the very tip of the finger, a spot of this signefuls O, in the which there was contained scarcely one small drop of the Ichorous excrement. The spot being opened, & thereto applied Cotton dipt in Aqua vite wherein there was Treacle dissolved, and about the whol hand and wrist a linen cloth ( after it had been first well soaked in vinegar and water ) doubled and wrapped, the pain immediately ceased ; insomuch that the very next day following the finger was fully and perfectly healed. But the same Author addeth further, that this incision ought forthwith in the very beginning to be made ; because that otherwise by the concurrence of the Humors there will be excited an Inflammation and Swelling, and so the flesh lying underneath, yea, and even the bones also will be in danger of being eaten through. For the Skin in that place is of an extraordinary thickness ; so that the matter of the Paronychia ( which in it self is malignant ) when it can by no means exhale, it then acquireth the greater acrimony and poysonfulness ; and the finger also, yea, and the whol hand ( by reason of the vehemency of pain ) is swoln and blown up : and this incision very little or nothing availeth, unless that the matter be first concocted and converted into Pus.

### Chap. 15. Of Perniones or Kibes.

There is also found a peculiar kind of Inflammation, which they term Perniones ; the Greek call this Affect Chimesthon and Chemeithlon

lon (from the Greek word *Cheimon*) in regard of their appearing in the Winter time only. And it is such a kind of Inflammation as in the Winter time ariseth in the heels, and on the toes and fingers. I once likewise saw a Noble-man that had such a kind of Inflammation on the very tip of his Nose.

### The Causes.

Now this kind of Inflammation ariseth from the Winters cold, whilst that by it not only the part is weakened and made more apt to receive, but that likewise from the pain there is caused an attraction of blood unto the part.

Yet notwithstanding this is worth consideration, how it cometh to pass that he who hath in the Winter time undergone and suffered some notable cooling of the extreame parts should yet notwithstanding be wel, and altogether insensible of it during the Summer, and the Winter following again (and thus to continue for some years, and until the Malady be wholly removed and taken away by cure) should be so sensible of an extreame itching, pain, and swelling in the part that was over cooled as aforesaid; and that although in the Summer time he felt no ill, instantly in the very first entrance of the Winter the Malady should again get head and return, and an itching be again felt in the part affected: al which argueth that there was some strong impression left behind in the part. For those that are thus greatly cooled do not only suffer a bare alteration; but that there is likewise something that is substantial communicated unto the part affected, appeareth even by this, That Apples and Eggs when they are frozen, if they be cast into cold Water, there is then an Ice taken out of them, so that it outwardly sticketh fast unto them like unto a crust, and then these Apples and Eggs return again to their former Natural state; whereas on the contrary, if they be put into warm Water, they become flabby, turn black, and are corrupted; which notwithstanding could not possibly happen if there were only a meer and simple alteration; and therefore we may conclude, that by the pain that afflicteth the part there is blood attracted to the part affected, that exciteh and causerh the Inflammation.

### Signs Diagnostick.

There went before a guarding and preservation of the extreame parts of the Body (against the injuries of the external Air) that was but weak and sleight, and not sufficient to maintain a due warmth in them; and thereupon an undue cooling befallth them; there is likewise an itching and a pain, that is not only once (and after that the sick person hath suffered a refrigeration from the external Air) perceived; but, although it cease in the Summer time and Autumn, yet notwithstanding about the beginning of Winter it a-

gain returneth; the part waxeth red, and swellth up; and now and then also it is exulcerated.

### Prognosticks.

This Tumor (to tellyou the truth) bath in it no danger at al: yet notwithstanding if the Malady be not speedily cured, it wil prove tedious, and of long continuance, and this pain wil for many yeers be grievous and troublesom unto the Party thus affected; and sometimes likewise the part is wont to be exulcerated.

### The Preservation.

Left that the parts should be hurt by the external cold, it is requisite that in the Winter time they should be sufficiently fenced and provided for against the injuries of the aforesaid external cold Air. And more particularly (left that the feet be hurt) it wil be expedient to wear Leg-harnesses (as they call them) or linen Socks wel moistened in the Spirit of Wine, especially in that part of them by which they cover the feet. But seeing that it cannot wel be that al the parts should be sufficiently kept from and defended against the cold, yet notwithstanding, left that any one (after he hath for a while been in the cold Air) should suffer any dammage, the refrigerated parts are not first of al to be altered with the contrary quality; but rather we ought to do our endeavor, that the cause which hath insinuated it self into any part may be removed and taken away. And therefore (as it is commonly wont to be done in the cold Septentrional Regions; and of which as of a thing very wel known, *Gulielmus Fabricius* takes notice in his Treatise of a *Gangrene* and *Sphacelus*, Chap. 10.) the refrigerated part is not to be put close to the fire, neither are those things that are hot to be imposed thereon; (for if this be done, the coldness, or indeed rather the cold Atomes retained in the part being by this means thrust down into the deeper parts of the place affected, a most intollerable pain happeneth thereupon to arise, yea and sometimes also a *Gangrene* is produced and excited) but the cooled part is to be wel rubbed with Snow that so by its like the coldness (or cold thing) may be extracted out of the affected part, after the same manner as Apples or Eggs being frozen and cast into the coldest water are restored unto their pristine Nature, the extracted Ice sticking fast without unto the rinds of the one, and shels of the other. And for this very reason the Inhabitants of the abovementioned Northern Regions, when they have been travelling do not accustom themselves to enter into Stoves or Hot-houses, or so much as to draw neer unto any fire, until they have first thoroughly rubbed their Hands, Nose, and the extreame parts (or tips) of their Ears with Snow; or have plunged (as we may so say) their almost frozen feet into cold Water, or Snow.



**Snow.** And the same *Fabricius* (in the place alleadged) relateth, That a Noble man of good esteem and reputation told him, that when he travelled in those Regions he himself on a time lighted upon one travelling as he was upon the Road; whom finding to be stiff with cold and almost dead he caused to be put into a Cart; and having brought him into an Inne, his Host (the man of the house) immediately plunged him over head and ears, as we say, in cold water; which was no sooner done, but instantly there issued forth from all parts of him a kind of frostiness, in such a manner that his whole body seemed as if it had been all over covered with Ice, like as with an Iron shield: and then he gave him to drink a Cup of Hydromel, putting therein the powder of Cinnamon, Cloves, and Mace; upon which he fell into a sweat in his Bed; and soon after the sick person returned unto his former state, and became perfectly well recovered.

### The Cure.

When now the said congelation is asswaged and qualified, and the cold for the most part extracted and drawn forth, or else hath exhaled of its own accord, (which is known by this, that the pricking pain is much moderated, if not quite ceased) then the part is to be fomented and cherished with sweet Milk made blood warm, in which there have been boyled Rosemary, Organy, Sage, the Leaves of Rue, and Bayberries. It will be likewise very commodious (this being a remedy that is also very well known) to thrust deep into warm Water (in which Rape Roots, especially those that were formerly congealed and frozen with cold have been boyled) the Hands or the Feet. Or,

Take *White Wine* one pint; *Allum* an ounce; boyle the *Allum* with the *Wine*, and let the part be well washed therewith: the Decoction also of *Lupines* is good and helpful: and after it let the part be anointed over with *Honey* in which live *Sulphur* hath been boyled.

This is likewise very efficacious:

Take of the Oyl of *Bayes* two ounces; *Honey* one ounce; *Turpentine* half an ounce: Mingle, &c. Or,

Take *Turpentine*, unsalted *Butter*, and *Mace*, of each alike, and what you please for the proportion: Mingle them, &c. Or else,

Let the part be anointed with Oyl of *Wax*.

If the part be already exulcerated, *Allum* powdered and mingled with a like portion of *Frankincense* powdered likewise is very helpful, and well approved of, a little *Wine* being thereto added: or the Oyl of *Roses* boyled in a *Rape Root* (or in the *Reddish Root* made hollow, and the pith taken all out) and then squeezed and pressed forth.

Or else let an Unguent be made of *River Grabs* burnt, with *Honey* and the Oyl of *Roses*. Or,

Take *Rue*, the *Marrow* of a *Bull*, the Un-

guent of *Roses*, of each as much as you think fit: mingle them, &c. Or,

Take *Wax*, the fat of a *Hog*, of each an ounce, *Liecharge* of *Silver* or *Lead* ten drams; the rind of the *Pine* two ounces; of *Manna iburis* one ounce; Oyl of *Roses* a sufficient quantity. Make an Unguent.

### Chap. 16. Of the Tumor Ecchymoma.

There is likewise sometimes poured forth blood (the Skin continuing still whole and sound) into the spaces of the parts; from whence there ariseth an Affect, which by the Greeks is termed *Ecchymoma* or *Ecchymosis*, and by the Latines *Effusio*, *Suffusio*, *Sugillatio*. For an *Ecchymosis* is nothing else but *Chymeon ecchymosis*, that is, an *Effusion* or pouring forth of the Humors, to wit, the blood, into the next adjoining spaces, by reason of the opening of the Veins; to wit, if the Skin abiding whole the Veins pour forth that juice which they contain, that is the blood, as *Galen* speaketh in his second Book of Fractures, Comment. 16. and either the orifices of the Vessels gape (which happeneth in an *Anastomosis*) or else the blood doth as it were sweat forth and strain it self out through the Tunicles of the Vessels being rarefied; which the Greeks call *Diapedesis*; or else by contusion the Vessels are loosened; which chanceth if one fall from an high place, or else be oppressed and overlaid by the weight of something that is heavy lying upon him; or else be smitten and hurt with a club, stone, stump of a Tree; or else lastly, that by some violent motion and extension a Vessel be broken. Then (the Skin remaining whole) the blood is poured forth into the neer adjoining spaces; whereupon the color of the part is changed; and at first indeed it seemeth reddish; afterward it becometh Leaden colored, then yellowish, green, blackish: whereupon it is that *Galen*, in his Book of Preternatural Tumors, Chap. 10. and tenth Book of the Composition of simple Medicaments, Chap. 9. maketh two species of this *Ecchymosis*; one (which by the general name he calleth *Ecchymoma*) when the part obtaineth a middle color betwixt red and black; which indeed may properly be termed *Pelidna*, that is, of a livid or leaden color; and the Affect may likewise be called *Livor*, to wit, paleness, or wanness: the other he termeth *Melasmata*, that is, blacknesses; which latter are especially familiar unto old persons, as often as their Veins are bruited, or opened upon any other cause, and these happen upon any small or slight occasion; like as on the contrary, *Pelidna* and *Livores* befall Children and those that are young, and Women, and such as are of a white color.

But now, although oftentimes, and indeed for the most part, the part is not lift up into a Tumor or Swelling, but the Blood poured forth doth so insinuate it self into the spaces of the parts that there is no Tumor at all appearing: yet notwithstanding sometimes the part doth swell up, if there be great store of Blood poured out; and this also is now and then wont to happen after Venesection, to wit, if the whole Vein be smitten, or if the Wound that is in the Skin shall be closed up, but that which is in the Vein it self left open and unshut. For from hence by that Wound that is in the Vein the blood is poured forth, for which when there is no issue or passage open (the Wound in the Skin being closed up) it is oftentimes under the Skin poured out into the whole Arm; and sometimes it excitech also a certain swelling; but however, it alwaies dyeth the Skin of a Red and livid or leaden colour.

**Ecchymosis** But the Affect is various and different; and the *Ecchymosis* ariseth in a different manner, since that the blood is not evermore poured forth without the Veins; but oftentimes by reason of the great abundance of the Spirits and Blood the Veins and Arteries that are terminated in the Skin are filled full of blood, and thereupon the Body becometh coloured; as appeareth out of Hippocrates, Epid. 2. Sect. 4. in the end thereof, where he writeth thus; *That all diligence and care must be taken, that the passion and anger of the Mind may be provoked and stirred up, both for the repairing of the colour and the pouring in of blood.*

And to tel you the truth, in what place soever there is such an effusion of Blood, it may in general be called *Ecchymosis*; yet notwithstanding, *Paulus Aegineta* in his fourth Book, Chap. 30. (according to the diversity of the parts affected) reckoneth up three kinds or species, all which may be called by their several distinct and peculiar names. The first is those which we call *Hypopia* (and by Hippocrates named *Hypophthalmia*) that is, *Subocularia*, to wit, palenesses, or wannesses under the Eyes. Now it is termed *Hypopion* from *Ops*, that is, the Eye, because it appeareth under the Eyes; and it is an Affect differing from that we call *Hypopyon* (the difference lying in this, that the former is written by *o* and *i*, the latter by *o* and *y*) from *Pyus* (which the Greeks call *Pyon*) because it is a collection of *Pyus* or purulent matter under the Cornea Tunicle. The second Species is *Hypophagma*, which some in special term *Suggillatio*, to wit, an effusion of blood into the *Adnata* or *Cornea* (both of them Tunicles) of the Eye; touching which we have already spoken in the first Book of our Practice, Part 1. Sect. 2. Chap. 32. The third Species is that which is caused by the Contusion or bruising of the Nail; this Species Hippocrates calleth *Hyponychos*, and the Latine Authors term it *Subungulus*, in regard that it is an Affect under the Nails.

**Contusion.** Sometimes with *Ecchymosis* there is likewise conjoynd a Contusion; yea and sometimes also there is to great an abundance of Blood poured forth, that it being collected under the Skin and the Muscles, it there causeth a certain hollownels, and lifteth up the part into a Tumor, or Swelling. There is also sometimes (according to the Nature of the part) conjoynd therewith a pain; from whence it happeneth that mote blood floweth thereto, and by this means an Inflammation, yea and sometimes likewise at the length a Gangrene is excited. There is to be seen a notable History of this in *Johannes Philippus Ingrassias*, in his *Jatropologia*. When in the year 1537. (in an Hippomachie or Tilting, as we call it) the Marquess of Terra Nova ran with the Baron of Volaterran, it so chanced, that the armed Knee of the Marquess (by reason of the Fury and extraordinary fierceness of their Horses) gave so great a blow upon the bare and unarmed Leg of the Baron, that the Contusion or bruise that followed thereupon was so great and grievous, that the Baron died thereof four daies after. By reason of this his so sudden and unexpected death the Physitians were question'd and called to an account, for that they had not rightly and as was fitting managed the Cure. In whose behalf and defence *Johannes Philippus Ingrassias* wrote those two Books of Apology under the name and Title of *Jatropologia*. There is likewise extant in *Gulielmus Fabricius* (Cent. 2. Observat. 83.) another History (which you may there see) shewing how dangerous Contusions may be.

### The Signs.

Suffusions and these Suggillations are easily known. For the very colour it self, and the Swelling (if at least there be any) shal under the sense, and are apparently to be seen. The Causes are known by those things that went before, and such as are likewise present. For if any external Cause went before (as a Blow, a Fall, and the like) the Physitian may understand it from the relation of the Patient. But if none of these shall happen; we are then to consider the Blood in the Body; and well to weigh by what means it becometh thus peccant and offensive.

### Prognosticks.

1. Although, in truth, these *Ecchymomata* are for the most part void of all danger, and the blood that is yet thin may easily be dispersed: yet if this be not done, and that the blood be detained any thing long in the part affected (out of its own Vessels) it then may prove to be of dangerous Consequence, in regard that by this means there may be excited both a Corruption of that very part that is affected, and likewise a damage and detriment unto the whole Body: For the Blood being cloisted together unless it be forth-

with

with insensibly discuffed, or turned into Pus, (which is necessarily done, where the Flesh is withall greatly bruised) so that hence the part yet continueth soft, it putrefieth and corrupteth, and breedeth a Gangrene, and very frequently bringeth Death and Destruction upon the sick Person.

2. But there is great danger threatned, and nigh at hand, when the part affected continueth not any longer green or wan, but inflamed, and becometh very red, hard and distended. Of which we related that former notable History out of *Ingrassia*.

### The Cure.

As for what therefore concerneth the Cure, we will first of all treat of the Cure of that *Eccchymoma* that followeth upon a Contusion. For even this also very often happeneth; and whoever he be that knoweth the Cure of this, he shal have a sufficient store of Medicaments with which he may cure the rest; since that the discussing Medicaments that are here to be drunk have their place likewise in the other. First of all therefore, if the contusion be great, we must use the best of our skil and care to prevent and hinder the afflux of blood unto the place, lest that thereby an Inflammation should be excited. This is to be done by Venesection; for which cause *Galen* commands, That in a fall from on high, and in beatings and bruising, a vein be opened, and that although the blood doth not greatly abound, yet that by opening a Vein it be drawn forth, lest that an Inflammation should be excited; from whence not only evil symptoms, but oftentimes also even death it self hath its original. And the truth is, this Venesection is forthwith to be ordained and put in practise; & withal at the same time Defensives and Repellers are likewise to be placed neer about the part, that may impede and prevent the influx of blood into the part affected; such as are made up of *Bole-armenick*, *Terra sigillata* or *Sealed Earth of Lemnos*, *Dragons blood*, *Roses*, *Myrtles*, the Nuts of the *Cypress Tree*, *Galls*, *Pomegranate flowers*, *Roots of the lesser Consound*, and the like. As for instance:

Take *Bole armenick*, *Terra sigillat.* of each an ounce and half; *Chalk* half an ounce; let them boyl in *Vinegar*: after they be boyled, Take Powder of red *Roses*, the pure fine flour of the *Root Consolida*, or *Consound*, of each half an ounce; and with the Oyl of *Myrtles* make a *Cataplasim*.

Or only, which is likewise in common use, the white of an Egg shaken together with Rose water; and with buds or the couster part of flax, applied unto the place affected. Or,

Take the white of four Eggs, the Oyl of *Myrtle* and *Roses*, of each one ounce; *Bole armenick*, *Dragons blood*, of each half an ounce; *Cypress Nut* two drams; a little *Vinegar*; Mingle them &c.

And this is also here to be taken notice of, that there be not many moist and clammy Medica-

ments administred; for by reason of such humid things applied the blood fallen forth out of the Veins is easily putrefied: whereupon divers ill and dangerous Symptoms are afterward wong to arise.

But in very truth, when from a fall from some high place, beating and bruising (and the like Causes) the blood is not only gotten together under the Skin and the external parts, but oftentimes also is poured forth into the more inward parts, after the same manner as it is in the Circumference of the Body when the Vessels are opened or broken (which said blood is there clotted and corrupted, and is wont to cause Inflammations, and the worst sort of Feavers, dangerous Symptoms, and very frequently death it self) we must therefore use the best of our endeavor that the clotting and growing together of the aforesaid blood may be hindered; that it may be dissolved, and that it may be evacuated by stool, urine, or sweats, and that with all due and possible speed. For when once the blood hath gotten a putridness the Malady is not so easily cured, nor indeed at all without the most exquisite and singular extraordinary Remedies. Wherefore so soon as there is any the least suspicion that the blood is fallen forth without the Veins into the more inward parts, and that it cannot be dissipated by external Remedies, we must then use these things following: to wit, *Rheubarb*, *Rhapontick*, *Terra sigillat.* *Sperma Ceti* (in the Shops termed *Parmalesity*) the Eyes of Crabs, *Mummy*, red Corals, *Harts-horn*, *Madder* (such as the Dyers use in coloring) with the Waters of *Chereseoyl*, *Carduus*, *Marjoram*, *St. Johns wort*, *Fumitory*, *Alkekengy*, *Card. benedict.* *Scabious*, the Syrup of *Sorrel*, Syrup de *Acetositar.* *Citri*, *Vinegar*, and the like; which what they are will appear further from the following Receipts, and Prescripts.

Take *Rheubarb*, *Terra sigillat.* *Bole armenick*, *Mummy*, of each one dram; make of these a Powder: of which give one dram at once, with the Water of *Chereseoyl*, or *Shepherds-Pouch*. Or,

Take *Terra sigillat.* *Crabs Eyes*, of each one scruple; *Sperma Ceti*, *Goats blood* prepared, *Angelica* and *Gentian Roots*, choyce *Rheubarb*, of each half a scruple; seeds of *Carduus Bened.* seven grains; *Gloves* three grains: Make of these a Powder for two Doles, to be taken at twice, and drunk with the following Waters:

Take the Water of the Infusion of *Lavender* one ounce; the Waters of *Chereseoyl*, *St. Johns wort*, *Strawberries*, of each one ounce and half; *Wine Vinegar* half an ounce, for twice. Or,

Take *Terra sigillat.* *Madder*, *Mummy*, great *Comfrey*, *Rheubarb*, of each a scruple: mingle them, and make a Powder. Or,

Take *Rheubarb*, the Root of *Madder*, *Mummy*, *Crabs Eyes*, the seed of *Carduus Marie*, or *Mary Thistle*, the Root of round *Aristolochia* or *Birthwort*, of each one dram: mingle and make a Pow-



a Powder: give hereof a dram at once, with the Syrup of Sorrel.

Some there be likewise that commend the Water of Nuts.

They commonly administer one dram of *Sperma Ceti* dissolved in Vinegar, or some fit and convenient Water.

There are likewise some that make use of Unguents, and that with good success also; which are likewise taken into the Body, and are therefore styled Potable; as for instance, the Potable red Unguent of the *Ausburg* Practitioners. Or,

Take *Green Sanicle* four ounces; the *Leaves of Betony*, *Fennel seed*, *Juniper Berries* unripe, of each three ounces; the *Root of Elecampane*, of the greater *Comfrey*, *Rue*, *Ground Ivy*, *Rosemary*, *Rhaphanick root*, of each two ounces: all these being shred very smal, let them be stirred about and incorporated with three pound of fresh Butter: Set them then in the Sun for eight daies: afterward put therinto one Cyath or little Cupful (about two ounces) of *Sanicle Water*; then boyl it til the water and juyces be quite consumed; and then let the Butter thus incorporated and moistened with the Juyces be pressed forth, and kept for use. The Dose is half an ounce twice a day, to be taken with warm Beer; the place affected may likewise be outwardly anointed with the same, yet not at the first beginning and appearance of the distemper, but some while after. Or,

Take these Herbs, *Wormwood*, *Southernwood*, of each two handfuls: the *Herb Ladies Mantle*, *Motherwort* or *Mugwort*, the lesser *Comfrey*, the lesser *Sage*, *Germander*, the lesser *Centaury*, *Crosswort*, *Fennel*, *Strawberries*, *Fennugreek*, *Ground Ivy* or *Aleboof*, *Hyssop*, *Lavender*, *Milfoyl*, *Marjoram*, *Balm*, *Bugle*, *Pennyroyal*, *Pyrole* or *Winter green*, *Pimpernel*, *Rosemary*, *Sage*, *Sanicle*, *Savory*, *Spicknard*, *Betony*, *Vervain*, of each one handful; the roots of *Marsh-mallows*, *Clove-gilliflowers*, the greater *Consound*, *Angelica*, *Pimpernel*, and *Tormentil*, of each of these one ounce. These Herbs and Roots gathered green in the month of May or June, boyl in six pound of *May Butter*; adding thereto as much *Wine* as you judge sufficient: let them boyl together, until they be boyled enough, still taking heed that they burn not; and in the end adding of the Oyl of *Bayes* fresh and new, four ounces; *Sperma Ceti* half a pound; Make herewith an Unguent of a green color: the Dose is one ounce, in Vinegar or Beer; and this may likewise be outwardly applied unto Wounds. Or,

Take the *Roots of Tormentil*, *Dittany*, *Sanicle*, the greater *Consound*, *Consound Sarracen*, of each two ounces; *Castoreum* one ounce (that sort of it that is offensive by reason of its unpleasant taste may be omitted) *Madder* three ounces; *May Butter* three pound; red *Wine* as much as will suffice: mingle and boyl them till the Wine

be consumed; herewith make an Unguent; adding thereto of *Sperma Ceti* one ounce.

As for the Topicks, at the first beginning some Astringents are to be mingled with the dissolutive Medicaments. For when the Tunicles of the Veins (out of which the blood is poured forth) are somewhat bruised, they ought then to be a litle strained together, bound fast, and condensed, lest that the new matter drawn thither by pain be poured forth; since that if in the beginning only Digestives be administered, they wil not only dissolue the blood poured forth of the Veins, but attract and draw unto the part that blood that is in the bruised smal Veins. Afterward, that the litle contused or bruised Veins may return unto their Natural state, Digestives alone are to be made use of. For this end and purpose, some there be (now this indeed is the best kind of Remedy especially for those that are beaten) that wrap about the sick person the Skin of a Ram new flaid off, and whilst it is yet hot, besprinkled with Salt, Myrtle-Berries, and the Powder of Water-Cresses; or if such a skin may not conveniently be gotten, they anoint the Patient with the Oyl of *Roses*, of *Myrtles*, and of *Earthworms*, with which they mingle the Powder of red *Roses*, or *Myrtle Berries*; and the day following such a like Liniment may be administered;

Take Unguent *Dialibea* three ounces; Oyl of *Earthworms*, *Camomil*, and *Vill*, of each one ounce; *Turpentine* two ounces; the meal of *Fennugreek*, the powder of red *Roses*, and *Myrtles*, of each half an ounce; *Saffron* one scruple: make a Liniment, or an Unguent with a sufficient quantity of Wax.

If there be any particular Contusion, such a like Liniment may at the first be administered;

Take Oyl of *Roses*, of *Myrtles*, of *Camomil*, of each one ounce; the white of one Egg; the powder of *Myrtles* and *Roses*, of each two drams: mingle, &c.

After this, on the third day, let the part affected be somed with the Decoction of *Camomile*, *Wormwood*, and *Cummin*.

The next following Liniment may likewise be administered. But now in the curing of the Suggillation the most efficacious Remedy is the Root of the Herb *Sigillum Solomonis*, or *Solomons Seal*; which either new gathered, or else in the Winter season macerated in Wine, and bruised, and then applied in the form of a Cataplasma oftentimes in one only night wholly taketh away the Suggillation, so that the Native heat returneth unto the part affected. Or,

Take the *Roots of both the Consounds*, of each three ounces; *Camomil* and *Melilot* flowers, of each two smal handfuls; the meal of *Barley*, *Fennugreek*, and *Beans*, of each one ounce; the powder of *Wormwood*, half an ounce; *Cummin seed* one dram; *Saffron* half a scruple:

M

Mingle

Mingle them, and make a Decoction for a Cataplasm.

There is likewise commended a musty or mouldy Nut bruised, Reddish Seed, with dried Figs; Mustard Seed with Vinegar, Rue with Honey.

Or,

Take the Root of Wake-Robin or Cuckowpint while it is green, an ounce and half; Solomons Seal four ounces; these Roots being shred smal, pour upon them the water of Elder flowers, white Lillies, and Bean flowers, of each four ounces, Wine Vinegar two ounces, Alom six drams, one Gall of a Bull; let them stand and digest for the space of eight daies, and every day during that time let them be well shaken together.

In this Water let Linen Cloaths be well soaked, and so applied unto the part affected.

Or,

Take Pigeons Blood, Cummin, Camomile, of each one dram; the meal of Fenugreek, half a dram; Celtick Spikenard one scruple, Malmsey as much as is sufficient; make a Liniment.

In special, in a Swelling (especially if there be a Leaden and wan colour after Venesection) there may be sicly applied the Oyl of Rue, and the Leaves of common Rue, boyled in common Oyl imposed upon the place affected.

But if the Malady be not remedied by these medicaments, neither the blood that is shed forth without the Vessels may by them be dispersed, then if the place wil bear it, Cupping-glasses are to be administred; which are the most effectual Remedy for the extracting of whatsoever is contained in a deep place; and moreover if need require, Scarifications are also to be made use of, that some of the Blood may manifestly be evacuated and emptied forth.

But now if by all these there cannot be made that Resolution of the Blood that ought to be, and withal if there be present any tokens and signs of a suppuration, as for example, if the place swell up a little and appear soft to the touch; if there be a certain bearing pain, and a redness begin to appear round about, then the suppuration (in the common and received Opinion and Judgment of Chirurgeons) is to be holpen on and by all means to be furthered. The Suppuration being thus finished and wrought, the Ulcer is then to be purged and cleaned, filled up with Flesh, and at length closed up with a Cicatrice. Yet notwithstanding in the use of these suppuratives great caution is to be had; and of these only such as are gentle, mild, and moderate, are to be administred. For if there be any error committed in the use of these, and that we be not extraordinary carefull in this point, there may easily be excited in the part a fardid and filthy Ulcer, and a putridness withal. When therefore some of the latter Chirurgeons & those of our time wel consider the Premises, and what we have said, they advise,

that when we perceive that the Contusion is converted and turn'd into an Impostume, a perfect suppuration is not then to be expected. For if the Pus or purulent matter that is generated from the congealed and clotted blood be any long time detained and kept in the place affected, it may then excite and cause many evils, as Fevers, pains, and an extraordinary putridness; and may likewise corrupt the near neighboring parts, the Nerves, and the Bones; whereupon afterward Ulcers of dangerous consequence, and Fistulae also even from hence oftentimes take their Original. Neither likewise do these admit of any Emollient and suppurating Emplasters and Cataplasms; in regard that by these a putridness, and those other evils and mischiefs that are wont from thence to arise, may easily be excited in the part. But they counsel and advise us rather that such a place wherein there is contained any clotted blood (which now exciteth the Apostem) be forthwith opened with a Pen-knife; and that in the Wound made by Incision there be conveyed in a Tent anointed with Unguent Egyptiack; and that the whol place be well fenced and covered with some sic and convenient Emplaster that may preserve the Native heat thereof, and defend it from putridness. And this they conceive is more especially to be observed, if the contusion be made in the Sides, the Belly, or the Back. For then there is diligent heed to be taken, whether or no on the third, fourth, or fifth day (in that place wherein the Contusion or bruising happened) there arise any Swelling with a pain, and thenceforth from day to day encrease; and whether or no there be a bearing pain excited; and that the sick Person cannot wel endure that the said place be touched; and whether there be another kind of redness appearing in the Circumference; and whether the breathing be difficult; and some kind of preternatural heat discovering it self in the Body. For wherever these things appear, (albeit there be appearing no wanness or Leaden colour in the external parts) it is a sign and token that the Pus or corrupt filth is gotten together, and that the Impostume is excited. Whereupon (lest that the Pus convert it self unto the more inward parts, and there raise as it were Conny-burrows (for so they term them) and gnawing assunder ear through the more inward parts, and so by this means hasten upon the sick Party a sudden Death, or long continuing Diseases, the place is speedily to be opened; for the place being thus opened, the Pus very easily issueth forth. Let the Wound be afterward handled and ordered as we said before; and herein we must not neglect or omit Venesection, and Vulnerary Potions; but they conceive that there is scarcely any, or at least very little benefit arising and accruing so the Patient from Emollients and Suppuratives.

But

But if the Contusion be great, or that any error hath been committed in the Cure, or that the place begin to look black and blewish, and to be mortified (by reason of the suffocation of the Native heat, so that a Gangrene and Mortification be feared, as like to ensue) then in the first place Scarification is to be administred; or likewise, if need so require, Cupping-glasses are to be applied, that so the corrupt blood may be evacuated. After this the part is to be fomented with warm Vinegar, or the Decoction made of the Reddish Root, of *Serpentaria* or *Vipers Grass*, *Cuckowpint*, *Solomons Seal*, and Wine as much as will suffice. For such like Remedies dissolve the clotted blood, and draw it forth from the very bottom unto the outmost part of the Skin. And after let there be applied the *Diachylon-Flower-de-luce Emplaster*. Or,

Take *Southernwood*, *Cumin Seed*, *Camomile Flowers*, of each one dram; the Juice of *Wake-robbin* or *Cuckowpint* as much as will suffice; make hereof a Cataplasme. Or,

Take *Oyl* an ounce and half, *Wax* an ounce, the Juice of *Marjoram* an ounce and half; let them dissolve together at the Fire, and then add of the Spirit of Wine one ounce.

And to conclude, that which *Paracelsus* adviseth is to be taken notice of; to wit, that in the contusion of the Muscles (and especially those about the Ribs) the Flesh a little swelleth up, and becometh as it were snotty and putulent; insomuch that if it be pressed down and squeezed together it sendeth forth a flatulent Air, with a certain kind of low noyse and gentle hissing, and withall the print and impression of the Fingers remaineth, and is to be seen for some while after. And thereupon (in that void space that the Flesh separating it self from the Bones hath left) there is a putulent and rotten filth gathered together, by which there is caused a syderation and putrefaction. If therefore this shal happen, the Malady is speedily to be taken in hand, the best means used, and the part most strictly and closely to be drawn together; and furthermore, *Oxycroceum* or *Ireat Diachylon*, or the like Digestives are to be administred.

And thus much shall suffice to have been spoken touching Tumors arising from the Blood; there now follow those Tumors that arise and proceed from Choler.

## Chap. 17. Of the Tumor Herpes.

HAVING hitherto treated of and explained the Tumors arising from the blood; it now remaineth in the next place, that we likewise explain and declare those Tumors that proceed from Choler. Among the which the *Erysipelas* is commonly wont to be first propounded and reckoned up. But since that, as we conceive, the *Erysipelas* (as it is now aduies with us) or as it hath been by the Ancients vulgarly termed, *Rosa*,

may more fitly be recounted among the Tumors arising from the blood; we have therefore treated thereof above, among the Tumors proceeding from blood, in the seventh Chapter; where we handle the *Erysipelas*.

But now *Herpes* is truly and properly a Tumor proceeding and taking its original from Choler. And it is termed *Herpes* from its creeping; to wit, because it seemeth to creep like unto a Snake; and for this reason, because that no sooner doth one part seem to be healed and well, but the Disease instantly creepeth unto the next adjoining parts. And although (to speak truly) there are very many Maladies that Creep along; yet in special, that Tumor is by Physicians termed *Herpes* that is excited in the superficies of any part (from yellow choler sincere or simple, that is, severed from all other humors) and from thence creepeth along unto the parts next adjoining. For as the *Erysipelas* ariseth from blood very thin and cholerick; so the *Herpes* proceedeth from excrementitious Choler. *Celsus* seemeth to propound and mention *Herpes* under the name and notion of *Ignis Sacer*, or the Sacred Fire: whereas other Latine Physicians understand an *Erysipelas* under this appellation of *Ignis Sacer*.

### The Causes.

The containing Cause of *Herpes* being sincere, pure, and sharp Choler, severed and separated from the rest of the humors; which by its implanted thinness penetrareth and pierceth even unto the outward or Scarf-skin, and is by and through it diffused; it hence appeareth and by consequence followeth that the Tumor or swelling in it is yet less than in an *Erysipelas*. For as in an *Erysipelas* the Swelling is less than in a *Pblegmone* by reason of the small store and thinness of the matter that is found in the one more, in the other less: so again in the *Herpes*, the swelling is less than in the *Erysipelas*, for the very same cause. But as for the Antecedent and Procatartick Causes, they are almost the very same, as in an *Erysipelas*; yet notwithstanding somewhat more disposed to the generating of an excrementitious yellow choler, then to the breeding of a cholerick Blood.

### The Differences.

The Differences of *Herpes* are taken from the diversity of the containing Cause, and the humor: For although every *Herpes* hath its original from Choler and a thin humor; yet notwithstanding, since there are certain degrees of its tenuity, thinness and purity; if that humor, or choler, be simple and of a thin substance, then the Affect that retaineth the general name is termed a simple or single *Herpes*. But then if there be any portion of Flegm mingled therewith, there is produced an *Herpes* that causeth and raiseth little Bladders in the Skin like unto the Miller, whereupon it is called *Herpes Miliaris*. And lastly, if the Choler



be more sharp and biting, so that it eat through the skin unto which it adhereth, it is then termed *Herpes Etsibiomenos*, that is, the eating Herpes; and this same by *Galen* (in his 14. Book of the Method of Physick, Chap. 17.) is called absolutely and only *Herpes*, and is almost of the same nature with an exulcerated *Erysipelas*; from which notwithstanding it differeth in the thinness of the humor. For so saith *Galen* in the place before alleadged: It is (saith he) an exceeding thin humor that exciteb the Herpes; even so thin, that it doth not only pass through all the interior parts, which likewise are of a fleshy substance, but also the very Skin it self, even unto the utmost part of the Scarf-skin, the which alone (in regard that it is kept in and retained by it) it both gnaweth, and likewise eateth through; wbenas if it could also in like manner pass through it by sweating, it would not then excite and produce any Ulcer. But now the exulcerated *Erysipelas* and the *Herpes Etsibiomenos* differ likewise in this regard, that the exulcerated *Erysipelas* doth not only seiz upon the Skin, but also upon some part of the Flesh that is underneath it; but the *Herpes* exulceratech only the Skin.

### Signs Diagnostick.

In regard that the *Herpes* is apparent and manifest unto the Senses, it is therefore easily known. For it is a broad Tumor that hath little or no height in it; so that the part is scarcely lifted up at al; but may seem rather to be exasperated, then to swell up unto any height. There is moreover present to accompany it a certain kind of hardness, and a pain, and as it were a certain sense and feeling of an heat and burning. But the *Herpes Miliaris* hath divers smal Pustules like unto Miller, in the very top and outside of the Skin; of the which although some one or more of them be cured, yet notwithstanding there wil be still others arising; so that the Malady may seem by creeping still to move forward unto the adjacent parts; and if the Pustules be broken there will somethings that is of a quality and resemblance betwixt Pus and rotten dregs flow forth, the place it self will be very red; and oftentimes also it will have a middle colour, neither absolutely red, or pale, but between both. But then the *Herpes Etsibiomenos* (or the *Herpes* that eateth through) is, when there appear many smal creeping Ulcers, and holes, which yet notwithstanding proceed not beyond the Skin; or, as *Celsus* (in his fifth Book Chap. 26.) writeth, It is a Malady with an excoriation and exulceration of the highest and utmost Skin, without any height at all, broad, somewhat pale and wan, yet unequally, the middle whereof becometh whol and sound, when at the same time the extreame parts thereof are in their progress and motion forward; and oftentimes that which seemed to be altogether whole and sound is again exulcerated; and the Skin that

is next about it (which the Malady is even now ready to seiz upon) is somewhat more swollen and harder, and hath a Colour changing from Red to that which is dark and blackish.

But, that we may likewise here give you to understand this, the more modern and late Physicians (whom we commonly stile Barbarous) almost all of them comprehend the *Herpes Miliaris* and the eating *Herpes* under the name of *Formica*, as being deceived either by the likeness of names, or else by Ignorance; whereas notwithstanding with the Grecians *Murmeia*, that is, *Formica*, is a certain kind of Warts.

### Prognosticks.

1. The *Herpes* (albeit there be no danger in it, unless it be greatly exulcerated, and extreame-ly putrid) yet notwithstanding it is not easily cured; and usually the Disease is of a long continuance, unless there be (in the Cure) a due regard had unto the whol body.

2. Accordingly as the Choler from which the *Herpes* ariseth is more or less peccant and offensive, so likewise is the *Herpes* to be accounted more or less dangerous.

### The Cure.

That so therefore the *Herpes* may be cured, there ought to be a due regard had unto the Cause Antecedent, and Continent, as also unto the part affected; and in the first place, and especially of the Antecedent. Since therefore that *Herpes* hath its original from yellow Choler and a salt humor, the said yellow Choler is first especially to be purged out of the Body; for unless the Body be purged, the sick Person wil never perfectly be cured and made sound. For although upon the applying of Topical Medicaments, in some one place the part may seem to be sound and wel; yet notwithstanding it soon breaketh forth again in another. If the matter be extraordinary thin (as it is evermore in *Herpes*) then Sudorificks ought likewise to have their due and proper place. But if there be any thing of Phlegm, or of the serous wheyish humor therewithall mingled, then some of those Medicaments that purge Flegm and Whey may therewith be mingled. The Diet likewise that is prescribed ought to be such as is fit and convenient where Choler and the adust humor offendeth.

Now when we have in the first place done what is requisite as to the Antecedent Cause, we are in the next place to take into consideration that very Cause that we call containing. And therefore first of all, when there is in the Skin an extreame and intense heat of Choler, then Coolers are to be administered, that may both extinguish the fervent heat of the Choler, and likewise repell and drive back moderately; such as are those Refrigerating Medicaments that are commonly wont to be administered in the *Erysipelas*; as for instance, Let-  
tice,

tice, Knotgrass, and Navel-wort (which last some call *Vener-Navel*, or *Kidney-wort*) and the like. After that the fervency of the heat is somewhat abated and qualified, that which remaineth behind is to be digested and dissipated by Medicaments that are rather of a drying Nature than such as moisten: as for example, Linseed boyled in Wine and Oyl, and the spume or froth of Silver. And these are more convenient in a simple heat. But now if Pustules shal chance to happen, because that they are sometimes broken and putrefie, (lest that there be excited in the part a putridness) those Refrigerating and Repelling Medicaments ought not to be cold and waterish, but cold and dry. And therefore in the first place, we are to make use of the yong Shoots of the Vines, the tops of the Black-berry bush (or as some call it the Dog-berry tree) the Leaves of the Sallow tree, and Plantane. Here is likewise useful the Cataplasim that is made of the Rinds of the Pomegranate, and Barley meal boyled in Wine. There may also be administered, Galls, Cypress Nuts, Pomegranate flowers, Bole-armenick, and Terra Sigillata. And when at length there is need of Digestives, there may be Cataplasims compounded of the Meal of Miller, Beans, Flax, and Lupines, boyled in Wine. If the Pustules break, and the Pus flow forth, there are likewise Cleaners to be administered. For this end and purpose, this following is fit and proper:

Take Plantane, Shepherds Pouch, the tops of the Bramble bush, of each one handfull; the cups of green Acorns twelve pair; Myrtle leaves one ounce; Pomegranate flowers, Myrrh, and Frankincense, of each half an ounce; boyl them in Water out of the Smiths Forge. Or,

Take Rosin, Turpentine washed with Rose water, of each one ounce; Oyl of Roses half an ounce; the Yelks of two Eggs, the juyce of two sweet Oranges: Mingle them, &c.

In the Herpes Miliaris this is likewise very useful:

Take Chalk, Oyl of Olives, and Vinegar, of each as much as will suffice: Mingle them and make a Liniment.

Valefcus de Taranta, in a proper and peculiar Chapter of the cure of Formica, commendeth for a secret this that followeth:

Take the moist juyce Wool of a Sheep, let it be beld to the fire until it be black, and then let it be made into a Powder: afterward let it be mingled with Rose water that it may become like unto Varnish; with the which let the parts affected (with a feather) be anointed thrice every day, until it be wel. Or,

Take Barley meal, Bean meal, the meal of Lentils, of each one ounce and half; the powder of red Roses, Wormwood, the prickly Dock, of each half an ounce: boyl them in the Decoction of Pomegranate rinds, Pomegranate flowers, Plantane: add hereto afterward the Oyl of

Myrtle, and Honey, of each a sufficient quantity, and make an Unguent.

Unto which (if use and need require it) we may also add and mingle the flower of Brasi, and such like. And the very same likewise are convenient in the Herpes Esthiomenos; as for instance:

Take Sumach, Plantane, Galls, of each an ounce and half; of branny Bread one ounce; Powder of Roses half an ounce: boyl them all in Wine, and make a Cataplasim. Or,

Take cleafed Barley, Lentiles, Beans, of each one handfull; Arnogloss (or Lambs Tongue) two handfulls; Pomegranate flowers, Roses, the grains of Myrtle, Sumach, of each half an ounce. Let all except the Barley be grossly powdered, and then boyl them in Wine until the Barley be soft, and make hereof a Cataplasim. Or,

Take the Rinds of the Pine tree burnt and washed a dram and half; Ceruss three drams; Frankincense one dram; Goats fat six drams; Oyl of Myrtle two ounces; Wax as much as wil suffice: make herewith an Unguent.

But if we have a mind to dry more than ordinarily, we may ad the prepared file-dust of Iron, the flower of Brasi, and Lime washed.

This is likewise commended:

Take the spume or froth of Silver half an ounce; the juyce of Leeks and Beets, of each five ounces: Mingle them, &c.

Hieronymus Fabricius writeth that (with very good success) he made use of this following Remedy:

Take the juyce of Tobacco three ounces; green or Citron-coloured Wax two ounces; Rosin of the Pine tree an ounce and half; Turpentine one ounce; Oyl of Myrtles as much as wil suffice for the making and forming of a soft Sear-cloth.

But if the Ulcer be already putrefied, we must then beake our selves to the Remedies that are stronger and more forcible; such as are the little sweet Bals of Andro, Musa, and Polyidas: a for example;

Take Litbarge, and Ceruss, of each two ounces; the Rinds of Pomegranates half an ounce; Myrrh one dram; Frankincense a dram and half; the flower of Brasi and Allum, of each a dram; and with the Oyl of Myrtle and Wax (a sufficient quantity of each) make an Unguent.

But if these wil not serve the turn, and that the Ulcer and putrefaction creep further, and become broader, we must then have recourse unto the stronger sort of Remedies.

They refer likewise unto cholerick Tumors those that we call *Pblystene*, *Impetigines*, *Lichen*, *Sudamina*, and *Epinyttides*. But because that these little risings or swellings proceed not from pure Choler, but from Choler mingled with ferous and salt Humors, we wil therefore

creat of them below, with the rest of the Tumors of this kind.

### Chap. 18. Of the Tumor Oedema.

**L**ike as those Tumors that we have already hitherto handled, have their original from hot Humors; so there are likewise some certain peculiar Tumors that arise from cold Humors; and in the first place, *Oedema*, that hath its original from Flegm. For although *Hippocrates*, and other ancient Physicians under the name of *Oedema* understand al other Tumors whatsoever in general; yet notwithstanding those of latter times by *Oedema* do understand some one certain kind of Tumor only, and this they specially term *Oedema*; being a Tumor that is lax or loose, soft, without pain, yielding unto the touch and compression of the fingers, having its original from thin flegm, or else from the more cold and moist part of the Mass of blood.

#### The Causes.

The containing Cause of this Tumor is that flegm that is contained in the blood, to wit, if it be so increased, that it irritate and stir up the Expulsive Faculty. For then Nature being stirred up and provoked thrusteth forth the matter out of the greater Vessels unto the less, and expelleth it from the more noble parts unto the weaker, until at length it be received and retained by the most weak and infirm part. The cold and heavy Humor it self likewise very often by its own weight tendeth downwards, and also unto the extreame parts. And thereupon it is, that although the *Oedema* may be excited in al parts whatsoever of the body; yet notwithstanding it chiefly and more especially ariseth in the Hands, and the feet, (as it evidently appeareth in Persons that are Hydropical, Cachectical, and Phthisical) in regard that those parts are more remote from the fountain of heat. But now this *Oedema* is not suddenly generated, but by degrees, and by little and little. For why? the Humor is thick, and therefore altogether unfit for any speedy and sudden motion.

*Galen*, in his second Book to *Glauco*, and third Chapter, determineth that the *Oedema* is caused by a Pictitious or flegmy substance, or else by the Spirits when they are full of vapors; and such a like Tumor or swelling happeneth in dead Carcasses. From which place (as likewise from the 14. of his Method of Physick, Chap. 4.) *Johannes Philippus Ingrassias*, in his Book of Tumors, the first Tome, page 113. endeavoreth to prove a twofold kind of *Oedema*; the one from thin flegm; the other from a vaporous spirit: and that (to wit, the former) he asserteth to be a Disease; and the latter a Symptom only that followeth upon Phthisis, and the water betwixt the Skin, (one species of the Dropsie) and the Ca-

chexy. But yet although it be not to be denied that Carcasses (in the very first beginning of their putrefying, and as it were a certain kind of fermentation) swell up in some sort; yet that in the Cachexy, or Phthisis, the *Oedematose* (swellings of the Feet should in this same manner be caused, I cannot easily beleave; in regard that such a like putridness doth not then happen; but it is far more credible, that such like Tumors are caused from a serous wheyish Humor abounding in the body, and descending unto the Feet, and there abiding and sticking fast, as in a part more cold than the other parts of the Body. And be it indeed granted and admitted, that in the similar parts there may be some kind of flatulent Spirit collected, and that it may lift up the part into a Tumor; yet notwithstanding this Tumor is not properly *Oedema*, but is rather to be termed *Empneumatosis*, or *Emphysema*. And albeit such a like Tumor is by *Galen*, in his 14. Book of the Method of Physick, Chap. 4. called a Symptom; yet we say, that *Galen* then useth the name of a Symptom (in the general) for every Affect preternatural that followeth another.

But if we wel weigh and consider what this Tumor properly is, we affirm that it is altogether and in al respects a Disease; in regard that it is magnitude augmented, and for the most part an impediment and hindrance unto men in their walking. And although such an *Oedema* doth not indeed require a peculiar Cure; yet notwithstanding it is not for al that to be razed out of the number of Diseases, and placed among the Symptoms. For those Diseases that simply depend upon other Diseases require not any proper and peculiar kind of Cure; but those being removed, these likewise are taken away.

But now that very Humor that is the cause of *Oedema* is generated by an error and default in the sanguification; touching which we have spoken in the third Book of our Practice, third Part, second Section, and first Chapter.

#### The Signs Diagnostick.

*Oedema* is known in this manner: The Tumor is soft, and loose; and if it be pressed down with the finger, it easily yieldeth and giveth way by sinking, and to there is a little pit and print of the finger left behind. For the moist flegm softeneth and looseneth the part, and is more thick than ordinary, and therefore the more unfit for motion. It is either altogether without pain; or certainly if there be any it is very little, and scarcely sensible. For the flegm looseneth the part; neither doth it by dissolving unity excite any pain. The colour is somewhat white; there is an absence of al heat; neither is there in this (as in other Tumors) perceived any kind of pulsation or beating. By which said signs it is easie to discern an *Oedema* from other Tumors.

*Prognostick.*



*Prognosticks.*

1. *Oedema* in it self is a disease of no danger; for neither is the disease it self great, neither is the cause thereof of a dangerous consequence, nor is there any ill Symptom therewithal conjoynd. And if there be (as indeed there often is) any danger unto such as are affected with this *Oedema* (as it hapneth in the Phtisis, Cachexy, and the Dropsie) this chanceth not by reason of the *Oedema*, but from those Diseases that the *Oedema* followeth. Whereupon we ought to distinguish whether the *Oedema* arise of it self, or else whether it follow upon other Diseases: since that the *Oedema* that followeth after the more noted and considerable faults of the parts designed for Nutrition, wanteth not for danger. For although it be true, that oftentimes (without any danger) the Feet swell after Diseases of long continuance (from crudities collected by the disease) yet notwithstanding if such like *Oedema's* shall happen from a Refrigeration, or by reason of any other fault in the Liver, they are then dangerous; and threaten death by reason of those causes upon which they depend. But if there be no such thing joyned together with the *Oedema*, then there is no danger at all to be feared.

2. But yet, although *Oedema* be a disease without any danger; yet notwithstanding, it is of a long continuance; for the matter is colder, and therefore it cannot be overcome but in a longer time.

3. But yet it is terminated by a Resolution; unless (which sometimes happeneth) the matter be hardened.

*The Cure.*

As touching the Cure, we must first of all consider (as was said before) whether the *Oedema* follow any other Disease of the more noble parts. For if this shall happen, our care ought especially to be, that the Disease upon which it depends be taken away; since that unless this be taken away it cannot be cured, and that if this primary Disease be removed it then vanisheth of its own accord. If yet notwithstanding the *Oedema* bring along with it any trouble, and that it prove hard to be cured, it will not be amiss then to rub the part wel with Oyl mingled with Salt, or to foment it with a Sponge soaked in Wine, in which Wormwood hath been boyled. But if the *Oedema* arise without any other Disease, then in the first place, the cause from which the matter is supplied is to be removed and taken away. And therefore in the very first beginning, the course of Diet that is to be ordained must be such that in the least tendeth not to the generating and breeding of flegm, but rather such as wasteth and destroyeth it. And therefore let the Air in which the sick person abideth be dry; and likewise, let the meat and drink that he lives upon have a pow-

er and quality of attenuating and drying. Let the sick patty therefore be very sparing and temperate in mear and drink, that so the Natural heat be not oppressed and overwhelmed, and so by the weakening of it Crudities be generated; but that the said heat may rather waite and consume those crudities, and the more sicily and effectually work upon them. Let his Bread be wel baked, and leavened: and let him altogether abstain from bread unleavened; and let him but seldom eat either Pot-herbs or Broths. Fish is altogether unfit for him, unless it be fresh River fish, and of them such as are of a more solid substance, and these likewise (even as all other his food) are to be seasoned and sauced with Spices and drying herbs. Al endeavor must be used that the Belly may daily discharge its office; which if of it self it cannot do, it will then be requisite that before his meals he take some Aloes, which loosneth the Belly, and consumeth and drieth up the superabundant humidity. Before meals (if it may be done without any offence and prejudice unto the part affected) let the sick person exercise himself, that so the superfluous moisture may be consumed, and the Native heat excited and stirred up: and to conclude, let him sleep only in the night, and let his sleep then likewise be but short.

Secondly, In an *Oedema* properly so called Venesection hath no place at all; for here the blood is no waies peccant, but only the flegm: but the cold and crude humors in the body are to be concocted and evacuated. And first of all, the matter is to be digested and concocted by Medicaments that heat and dry, such as are elsewhere often propounded in the preparation of the flegmy humor; of which a certain Hydromel or Oxy-mel may most sicily be compounded. But yet notwithstanding if the humor be only wheyish, there is then no need at all of concoction.

Afterward the matter is to be evacuated by Medicaments that draw forth the flegm, which are elsewhere propounded. As for what concerns the part it self that is affected, the pituitous or flegmy humor which hath flown together into it ought to be evacuated; and this may be done by Repellers and Digestives, or those things that dis-cuts and scatter. But if Repellers be made use of, they are to be administered, not so much to drive back the humor, as to confirm and strengthen the part, and to dry up and consume the matter; unto which likewise there may not unfitly be added some of those Remedies that have in them a power and virtue to dis-cuss. To this end and purpose, Galen maketh use of a new Sponge (or if a new one may not be had, than any other) thoroughly wet and soaked in Nitre and Ley, and Posca, that is, a mixture of Vinegar and Water. There may likewise be used the courser part of Hemp (which we call Hurds) instead of the Sponge. Which said Medicament if it accomplish not our desire, the quantity of the Vinegar may then be augmented,

and a little Alum therewith mingled. And if neither this effect our purpose, nor satisfie our expectation, we ought then to betake our selves unto those that are stronger and more forcible.

As,

Take Flowers of red Roses, Camomile, the Leaves of Myrtle, and of Wormwood, of each half an handful, Pomegranate Flowers, and the Cypress Nur, of each one handful; Alum, and common Salt, of each one ounce and half; boyl them in Vinegar and Water, or in Ley, and so apply it with a Sponge, a Linen Cloth, or Hurds. Or else,

Take the Leaves of the Sallow Tree, Myrtle, Wormwood, the Flowers of Camomile, and of St. Johns-wort, of each half a handful: let them be all boyled in Ley until all the Ley be consumed; afterward, let them be wel pounded and bruised, and then add the Oyl of Myrtle, of Roses, and of Wormwood, of each one ounce; Salt half a handful, Nitre one ounce; make a Cataplasme.

Or, Take Cypress Nuts, Pomegranate Flowers, of each half a handfull; Flowers of Camomile and red Roses, and the Leaves of Wormwood, of each half a handful, the meal of Barley and Lupines, of each half an ounce, Alum three drams; Aloes and Myrtle, of each one dram; Saffron one scruple; boyl them in a sufficient quantity of Water and Vinegar; and make a Cataplasme.

Afterward in the state we are to proceed unto those things that discuss and dry much. For this purpose there is commended the Water of Lime, or a Ley of the Vine ashes applied with a Spunge; Or,

Take Marshmallow Roots, one handful, the Flowers of Camomile and Melilote, of each half a handfull; boyl them in Wine and Vinegar, adding afterwards of Hoggs Fat two ounces, old Oyl half an ounce, the Spume or Froth of Silver one ounce; Mingle them, and make a Cataplasme.

That Medicament is also very efficacious that is made of Rue, Honey, and Salt. Or,

Take Sulphur one ounce, Pigeons Dung ten drams, Bean meal one ounce and half, the meal of Lupines one ounce, Honey one ounce and half; and so make a Cataplasme with the Decoction of Camomile flowers. Or,

Take Sulphur, Myrrh, Salt, of each one ounce, old Oyl and Vinegar, of each as much as will suffice, and make a Liniment. Or,

Take Bryony roots two ounces, Wormwood, Bearfoots, Camomile, Melilote, of each half a handful; boyl them in Water or Honey, and being wel bruised & seared, add to them the powder of red Roses, the Meal of Beans and Lupines, of each half an ounce; old Oyl as much as will suffice, and make a Cataplasme. Or,

Take the Root of Asphodil, and the wild Cucumber, white Lilly roots, and Flowers of Camomile, of each one handful; boyl them untill they

be soft, and then add of Leaven, Tartar, washed or flaked Lime, and Sulphur, of each an ounce, Frankincense six drams, the Fat of a Hart, the Marrow of the Thigh-bones of Oxen, of each ten drams; make a Cataplasme.

There is likewise commended Ox dung, or Cow dung; for it both mollifieth and resolveth; of which with Sulphur, Frankincense, Honey, Vinegar, and the Broth of a Cabbage or Colwort, there may be made a Cataplasme.

In the applying of all which Medicaments, it is requisite that we observe, that before ever the Emplasters, or Unguents, and Liniments, be applied, the part be first made hot by frictions or rubbings and fomentations; for otherwise the Medicaments will not easily effect and accomplish our desire and expectation, by reason of the coldness of the part. The frictions may be made with hot Linen Cloaths; the fomentations may be of the Decoction of Camomile flowers, and Melilote flowers, and of the Leaves of Betony, Sage, Rosemary, Lavender, Organy, Wormwood and the like. For by the said fomentations and frictions the heat together with the blood is called back unto the part; and the excrements and superfluous humors are somewhat dispersed and scattered.

But if it be so that the Oedema seem to wax hard, and to pass into a Scirrbus, then we are likewise together with the former, to make use of Emollients or mollifying Medicaments. And for this use and purpose there is to be applied Vinegar, in which the *Lapis Pyrites* (we commonly call it the Fire-stone) or a piece of Mill-stone taken red hot out of the Fire bath been quenched; and after this the part is to be anoynted with old Oyl in the which the Root of the Wild Cucumber, and Marshmallow Roots have been boyled. Or,

Take the Mucilage of Marshmallow roots, Linseed, Fenugreek, Goose fat, the Marrow of a Leg of Veal, the Flower-de-luce root, Camomile flowers, of each two ounces; Styrax liquid, Mirrh, Frankincense, and oyl of Camomile, of each one ounce; Wax as much as will serve the turn; and so make an Emplaster.

But touching these Remedies we shall speak further, when we come to treat of a Scirrbus.

And although indeed it be true, that the Oedema is most frequently discussed and dispersed by Resolution; yet sometimes notwithstanding (as is apparent out of Hippocrates in his Book of Prognosticks Text 27.) it cometh to a suppuration, but this is but seldom, to wit, if it be in a place somewhat hotter than ordinary, or else that any other humor be therewith mingled, as it happeneth in the Oedema Phlegmonodes; and this if it happen there is then perceived in the next adjoining part both a pain, and a pulsation or beating. And therefore at such a time the Suppuration is to be

furthered

furthered and hastened on by those Medicaments that we call Emplastick; such as are *Diachylon simplex*, and other Remedies made of the Roots of Marshmallows, the common Mallows, Linseed, Fenugreek, with the Fat of a Hen, or such like. As for example,

Take *Bearfoot*, *Marshmallows*, the *Roots of white Lillies*, of each one handfull; boyl them, and when they are sufficiently bruised, add to them the meal of *Linseed*, and *Fenugreek*, of each two ounces; *Hogs grease*, and *Hens fat*, of each three ounces; *Saffron* half a dram, and thereof make a *Cataplasm*.

The matter being concocted and suppurated, we are not to expect a spontaneous or self-effecting Cure, in regard it will be a long time ere it come to this. Wherefore let the place be opened either with the Instrument for that purpose, or else with a potential Caustery; and afterward let the Impostume be thoroughly cleaned and purged with *Turpentine*, *Frankincense*, *Honey*, the *Juyce of Wormwood*, and *Honey of Roses*: furthermore, let the Cavity or hollownes be filled up with the Unguent *Basilicon*, the Unguent *Aureum*, & the Unguent of *Betony*, and such like; and at length let there be a Cicatrice drawn over it.

### Chap. 19. Of a Scirrhus.

HAVING treated of those Tumors that arise from the Blood, Choler, and Flegm; and it now remaining that we handle those Tumors that arise from Melancholly and black Choler; and it being so that a *Scirrhus* (to speak the truth) ariseth from both Melancholly and Flegm, the next thing therefore that we have to do, is to treat of the *Scirrhus*. Now then a *Scirrhus* is a hard Tumor without any sense or pain (or if there be any it is certainly but very little) arising from a thick humor that is Viscid, Clammy, and Cold; such as is the melancholly humor and flegm fixed and fastened in the parts. For there are two humors, (to wit, Melancholly and Flegm) out of which either singly and severally, or else mingled together, the *Scirrhus* ariseth, as they commonly determine. Now here (in this place) by Melancholly we are to understand, not that black humor which ariseth either from the Natural and adust Melancholly humor, or else from yellow Choler adust; but here we are to understand that Melancholly that is Natural, and properly called the Melancholly humor, to wit, the thick and more feculent or dreggy part of the Blood, or else likewise the Natural Melancholly Excrement, or else also (thirdly) a thick humor arising from an hardened Inflammation; the which if any one shal please to term Preternatural, I will not in that gainsay him. But by Flegm we are not to understand that Natural Flegm, or the Flegmatick humor (which is moist and thin, and from which the *Oedema* proceedeth) but a thick

Flegm, extraordinary dry, Glutinous, Viscid, and Clammy. Of both these humors retained in the part overlong (whenas the more subtile and thin parts thereof are vanished and gone, and the more thick and gross parts left behind) is the *Scirrhus* generated. For although some humor that is thick may flow unto some certain part; yet notwithstanding a humor so thick and glutinous that it instantly cauleth and produceth a *Scirrhus*, doth not easily flow unto any part whatsoever, but it by degrees and after some time becometh such in the very place affected, whenas the thinner part of the humor being wasted and consumed, the thicker and grosser are left to remain behind. From whence it is, that (for the greatest part) the *Scirrhus* followeth upon other Tumors (as for instance, Inflammations, *Erysipela's* and *Oedema's*) when they are not sufficiently and rightly cured, and that the thinner parts by means of heating Medicaments are either unreasonable, or overmuch and excessively dissipated; or else are by Repellers and Astringents repressed, so that the more thick and gross parts only are left behind; which being further incrassated and thickned, do cause and produce this Tumor, that (as we said before) is hard, and without pain and sense. From all which Premises it may easily be collected, that this Tumor is not suddenly all at once generated, but by little and little.

Yet notwithstanding *Paracelsus* dissenteth from this common and received Opinion; and asserteth that the *Scirrhus* is caused, not from the excrementitious humors, but from an alimentary juyce (yet such as is more thick than is fit and convenient for the nourishing of the flesh) when it becometh hardened; unto which notwithstanding there is (saith he) another humor adjoynd; and this hardening proceedeth (as from divers other causes, so likewise) from an Inflammation; not that the blood that is not discussed or suppurated is thus hardened, or condensed by the over frequent and unreasonable application of cold things; but that the blood being discussed by the vehement heat of an Inflammation, the juyce and moisture of that part that was inflamed is thickned and hardned.

But now a *Scirrhus* is twofold, viz. Legitimate (as we may to term it) and Illegitimate. Which said distinction (as *Fallopious* truly tels us) is not taken from the diversity of the matter; and the containing Cause; but from the divers and different accidents and proprieties of the matter. For before such time as all the more subtile and thin parts are either dissipated or consumed, there is as yet no absolute *Scirrhus*, neither do all things then want sense, neither is there as yet any perfect hardness appearing. But if (al the thinner parts being wasted and consumed) only the thicker shal remain behind, and these shal harden even almost unto the hardness of a Stone;



and that the part is void not only of al pain, but likewise even of al sense; then the *Scirrbus* is now already absolute and perfect. But perhaps there can nothing be said to the contrary, why we may not term the *Scirrbus* that is not as yet absolute impure likewise, and bastard, or spurious. Or if this distaste, and please not; the *Scirrbus* (we say) may furthermore be divided into that which is pure, and truly so called, and that that is impure and spurious or counterfeit: and that may be called pure which hath its Original from melancholy alone, or from thick flegm; and that impure and spurious which hath another humor mingled together with it, from whence it is called *Scirrbus Pblegmonodes*, or *Scirrbus Cancrosus*. There be some certain Authors that give us also another difference of a *Scirrbus*, from the parts wherein it resideth. For although in very many parts it hath no peculiar appellation, but is only defined by adjoining to it the name of the part affected (as we say the *Scirrbus* of the Liver, and the *Scirrbus* of the Spleen) yet notwithstanding in some certain parts it hath a proper appellation: for in the Nerves it is called *Ganglion*, in the Glandules (or kernels) *Struma*, in the Joynts *Porus*; of which in their proper places.

### Signs Diagnostick.

The *Scirrbus* is known from two signs especially, to wit, the hardness, and the absence or want of pain: unto which this may likewise be added, That when it is pressed it wanteth sense; and then we say, that the *Scirrbus* is altogether absolute and confirmed. And it is not to be wondered at, that the part thus affected should have no sense, or that there should be so little, if any sense at al, in a *Scirrbus*; for both the influx of the natural spirits is hindered by the matter that is impacted and fast fixed; and also the very temper it self of the Member is so changed that the part becometh altogether stupid. Others there are that add other signs also; viz. a Color somewhat black and wan; which yet notwithstanding is only a sign of that *Scirrbus* that ariseth from the Melancholy Humor; and if the temper be very cold, by reason of a thick and cold Humor, it is then likewise perceived by the touch.

### The Differences.

The Differences are taken from the Sense, either dull, or none at al. For if there be no sense at al present, the *Scirrbus* is now Legitimate and absolute: but if there be yet any manner of sense left remaining, it is not Legitimate and absolute. There are some likewise that add this, that in a Legitimate *Scirrbus* there grow hairs upon the part. The color wil inform us whether it hath its original from flegm, or from Melancholy; this color in flegm is somehing white; but in Melancholy, blackish, and wan.

### Prognosticks.

1. As for what concerneth the Event, that *Scirrbus* that is altogether destitute of al sense, is incurable.

2. But that *Scirrbus* that is not destitute of al sense, although it be not altogether incurable, (especially if at the beginning fit and proper Remedies be applied) yet notwithstanding it is not very easily cured; especially if it stick in any one of the more noble parts, as the Liver, or the Spleen likewise; since that the Liver and the Spleen wil hardly bear or admit of those so strong Medicaments which are requisite in a *Scirrbus* that is perfectly hardened; and those that are weak avail but little or nothing.

3. If there be any hopes of a Cure in a *Scirrbus*, yet this is not to be brought unto perfection, but in a long time. For to mollifie and soften the matter that is thick, cold, and hard, is a thing that is not easily done; neither indeed can it be done at al, but by little and little, and in a longer time than ordinary.

4. But when they may be cured, it is to be done in a twofold manner: either by Resolution and Discussion; or else by Maturation and Suppuration. But it is seldom that they are suppurated, and then likewise not without danger: for when they are suppurated they easily degenerate and pass into Cancers; especially those of them that proceed from a Melancholy Humor.

### The Cure.

As for what therefore concerneth the Cure, although there be a plain and absolute Tumor or Swelling already appearing, and that in the Cure we ought especially to have respect unto the containing Cause; and that we are to do our endeavor that it may be removed by Topical Remedies; notwithstanding the Antecedent cause is also not altogether to be neglected; and here we must prevent the augmentation of the Malady by the supply of any new matter.

Wherefore (first of al) whatsoever it be that generateth thick blood is carefully to be avoided; and such meats are to be choien that are easily concocted, and such as make a supply of good Nutriment; and such as incline and tend to humidity and moistness.

Secondly, the Humors (whether flegmatick or melancholick) are (being first wel prepared) to be evacuated by convenient and fit Medicaments; touching which we have already eliewhere spoken.

But thirdly, and principally, we ought to use our utmost endeavor, that the Containing Cause and the matter that maketh the *Scirrbus* be quite and clean taken away. But as for Repellers, here is no place for them. For since that the matter is both thick and cold, it wil not yield nor give place unto Repellers; but rather by the use of them

them is the more incrassated and thickened, and as it were impacted, and made to stick the faster in the part. Neither likewise are those Medicaments that greatly heat and dry fit and proper in this place; for by these the matter is only the more hardened. But those Medicaments that are here most conveniently administered, are, those that have a vertue and quality to mollifie that that is hardened, and such as afterward discuss and scatter the matter when it is softened. Malackick or mollifying Medicaments are therefore to be administered and applied, that are of a hot temperament, and yet notwithstanding but meanly, and not greatly drying; but neither yet manifestly moistening; but such as obtain as it were a certain middle nature between Moisteners and Dryers, and such as accomplish (as it were) a resolution and softening of the hardened substance. And such are, *The Oyl of sweet Almonds, the Oyl of Camomil, and white Lillies, Hens fat, Goose fat, Swines fat, the Marrow of Veal, and of a Hart, the Mucilage of Marsh-mallow Roots, Linseed, and Fenugreek; and such are likewise the Leaves and Roots themselves, of Marsh-mallows, Mallows, Linseed, Fenugreek, the Root of white Lillies, Bears-foot, dried Figs that are full and fat, Wax, &c.* And stronger than these, are, *Bears fat, old Oyl, Bdellium, Styra liquid, liquid Pitch, fat Rosins, Ammoniacum, Galbanum.* But we must carefully observe, when those Medicaments that are more mild and moderate are to be made use of, and when the stronger sort.

In a *Scirrhus* that is but newly begun we are to use those Medicaments that are of the milder sort: but in an old and inveterate *Scirrhus* that is become hard, those Remedies that are more strong and prevalent are to be put in practice. Moreover, the very Body it self, and likewise the part affected, are to be considered. For unto an hard body the stronger sort of Medicaments are to be applied; but for the tender and more soft bodies the milder and gentler sort of Remedies are most convenient. The part if it be harder and thicker (as if the *Scirrhus* be in a Tendon or Ligament) then we ought to administer and make use of the stronger Medicaments. And in the general we are to observe this for a Rule, That we handle the *Scirrhus* with all manner of care and caution. For if we administer those Remedies that do overmuch and more than is fitting Resolve, then (as we also already said before) the *Scirrhus* passeth into a stony hardness. But if we too much mollifie, there is then a fear that the *Scirrhus* may degenerate into a Cancer. Wherefore it is most safe in this case to follow the counsel and advice of the Ancients, that we use not alone any Medicament that hath in it a power either only to dry, or only to moisten; but that we administer such Remedies as mollifie and discuss; not together, but by turns, and one after the other; or o-

therwise that we mingle together Emollients or Mollifiers with Digestives. And for this use *Galien* commendeth the fomentation of Vinegar, wherein the fire-hot *Pyrites* stone hath been extinguished in this manner; Let the part be fomented with the Decoction of Marsh-mallows, Mallows, Bears-foot, the seed of Fenugreek, Linseed, and the like Emollients. Afterward, take the *Pyrites* or Fire-stone, or a piece of a Mill-stone, and having made it red hot cast it into the Vinegar; or else let the Vinegar be cast and poured upon that hot and glowing stone, and then let the vapor of the Vinegar steam up and be received into the Member affected. After this, let the Emollients be again administered; and let these Remedies be (as they ought) often repeated at many several times, and successively. And in this manner the *Scirrhus* that is almost desperate may be cured. But if it be over tedious to use these Medicaments (in the aforesaid manner) at several times; and by turns, then let them be mingled together. For by this means, at one and the same time, and together, the Tumor is mollified, and that that is mollified is discussed and dissipated by exhaling and breathing forth. For which end and purpose, out of the Simples before mentioned there may be divers Medicaments compounded.

As,  
Take Unsalted Butter, Scammony, Wax, of each as much as shal be thought sufficient; and then mingle them. Or,

Take the Meal of Fenugreek, Linseed, Marsh-mallow Roots, the Powder of the Holly-hock Root, of each one ounce; boyl them, and afterwards add, of fresh Butter an ounce and half; Styra liquid, Bdellium, Ammoniacum dissolved in Vinegar, of each half an ounce; Mingle them. Or,

Take Marsh-mallow Roots, the Roots of white Lillies, boyled and wel bruised, of each three ounces; fat and full dried Figs boyled, in number six; Ammoniacum and Bdellium dissolved in Vinegar, of each one ounce; Styra liquid half an ounce; Goose fat, Hens fat, the Marrow of a Leg of Veal, of each three ounces; Oyl of white Lillies, Oyl of Camomil, and Wax, of each a sufficient quantity; Make an Emplaster. Or,

Take the Meal of Beans, Fenugreek seed, Linseed, of each six drams, the Root of Marsh-mallows one ounce; Pitch five drams; Goose fat, as much as wil suffice; Make an Emplaster. Or,

Take the Mucilage of Marsh mallow Roots, and Fenugreek, of each one ounce; Fat dry Figs three ounces; Oyl of white Lillies, Camomil, Linseed, of each two ounces; Hens fat, Goose fat, Swines fat or Hogs Grease, Goats suet, Turpentine, Litbarge of Gold, of each four ounces. Boyl them all, until the moisture be consumed, and then with a sufficient quantity of

Wax, and adding therunto Ammoniacum, and Galbanum dissolved in Vinegar, of each three drams; and Flowerdeluce Root wel bruised two drams; make an Emplaster. Or,

Take Ammoniacum, Bdellium, Galbanum, Opopanax, Styrax liquid dissolved in Vinegar, of each one ounce; Liubarge of Gold ten drams; let them boyl in Vinegar: afterwards add, Pelitory, live Sulphur, of each half an ounce; Oyl of white Lillies and Wax, of each a sufficient quantity. Make an Emplaster.

But now in the administering of these Medicaments we ought alwaies seriously to observe whether the *Scirrbus* arise from flegm, or else (in truth) from a Melancholick humor. For it it hath its original from this last, it is then more warily and cautelously to be handled, than if it proceeded from flegm, lest that it turn into a Cancer; and especially, if it incline toward a suppuration, we must have a care that it be not too much irritated by hot Medicaments.

### Chap. 20. Of a Cancer.

**T**He Cancer (by the Greeks called *Carcinos*, and *Carcinoma*, so termed because it resembleth the Water-Crab or Crevish) is generated from an adust Humor, or black Choler. And yet notwithstanding *Celsus* seemeth to put a difference between *Carcinoma* and Cancer. For in his fifth Book, and 28. Chapter, he calleth the disease that we treat of in this Chapter only *Carcinoma*. But in the same Book, and 16. Chapr. he giveth the name and appellation of a Cancer (in general) unto certain creeping Ulcers; under which he likewise comprehendeth the *Erysipelas* that is exulcerated, the *Gangrene* also, and the *Sphacelus*. But yet notwithstanding all other Physicians whatsoever use the words *Carcinoma's* and *Cancers* as Synonyma's, that is, as words signifying one and the same Disease. For a Cancer is a Preternatural Tumor arising from black Choler, round, of a wan color, or somewhat blackish, painful; and which (when the Veins every where round about are filled and strut out) resembleth the feet of the Crab, Crevish, or Crawfish.

### The Causes.

The Cause of a Cancer is black Choler, in which either yellow Choler, or the Melancholy Humor hath degenerated, by reason of its being burnt. For the Melancholy Humor, while it yet continueth to be Natural, and is not yet burnt, doth never cause or produce a Cancer, but another Species or kind of *Scirrbus*. But from the black Choler alone, if it be burnt, (which sticketh fast in the Veins, neither can it by reason of its thickness penetrate into those streight and narrow passages, as the Melancholy humor doth that causeth the *Scirrbus*) the Cancer is excited and gene-

rated. But now of this black Choler there is a certain difference; for some of it is more mild and moderate, or less hot and sharp; but then another sort of it is very sharp and hot. That which is more mild causeth a secret hidden Cancer that is not exulcerated; but that that is more hot and sharp excireth an exulcerated Cancer. Now the said black Choler is more or less sharp, according as it is more or less burnt, or arise from a humor that is more or less sharp. Whereupon it is, That that which proceedeth from yellow Choler adust and burnt is worse than that which hath its original from a Melancholy humor. And looke by how much the longer it abideth in the place affected, and by how much the more it is putrefied and burnt, by so much the more it is rendered the worse. And hence it is that the Natural Melancholy humor also which first excireth a *Scirrbus* if it stick and abide long in the part, and especially then when it is not handled with all care and caution in the applying of heating and moistening Medicaments, it afterward excireth and causeth a Cancer. But whether the Cancer be without any Ulcer or no; and whether the black Choler be mild and moderate, or else exulcerated, and the cause more sharp; yet however notwithstanding, in, and of it self it is alwaies without a Fever; although accidentally a Fever may happen thereupon. In the mean time (we say) the Cancer it self is a hot Tumor. For although some there be that doubt whether a Cancer be to be ranked and reckoned up among the hot or the cold Tumors; (as there be likewise that question whether black Choler be a hot or a cold humor;) and although by the Arabian Physitians a Cancer is accounted and reckoned up among the cold Tumors, and *Galen* seem to incline thereunto, in his Book of black Choler, Chap. 4. and in his 2. to *Glaucos*, Chap. 10. yet notwithstanding it is by the same *Galen* in his Book of Tumors, Chap. 8, 10, 11. most rightly and truly reckoned up among the hot Tumors; since that it hath its original, not from the Melancholy humor cold and dry, but from black Choler, hot and dry. For albeit the Melancholy Humor may possibly give the first occasion of this Tumor; yet however notwithstanding the Cancer is not generated from it, unless the said Melancholy Humor degenerate and turn into black Choler; whether this happen in the Vessels, or in the part affected; like as sometimes a *Scirrbus* (as ere while we told you) that is produced from a Melancholy Humor may pass and turn into a Cancer. And this is the conjunct cause of a Cancer; to wit, black Choler, a humor hot and dry, sharp, Salt, corroding and corrupting all things; generated and bred from the heat of other humors, the heat now ceasing, or at least being not so vigorous that it may excire and cause a Fever; as it is wont to be in a *Pblegmone* and *Erysipelas*.

It is likewise generated from other Causes. For

now



now and then a hot distemper burneth up and inflame the Humor, and so generateth black choler: and sometimes the Food (Meat and Drink) being such as hath in it a disposition and tendency unto the generating of such a like humor, by the frequent use thereof, and in process of time, becometh the Cause of black Choler: and sometimes the very Spleen it self being grown weak, and not able to attract and draw unto it self that that is generated of the Melancholly humor, doth thereupon leave this humor in the Body, which after it hath been for a while detained in the Body is inflamed and burnt up. The very same likewise happeneth, if either the monthly Courses (in Women) be suppressed, or the Hemorrhoids obstructed.

And in truth, the Cancer is generated and bred in all the parts, both external and internal; and yet notwithstanding it especially appeareth (as *Celsus* tells us in his fifth Book, Chap. 28.) in the superior parts, about the Face, Nostrils, and Ears, Lips, the Paps or Breasts of Women; which chiefly (by reason of their laxity and looseness) do very easily receive that humor; and then again (in regard of the consent and agreement it hath with the Womb) they readily admit of those vicious and naughty humors that ought to have been purged forth through the Womb.

### The Signs Diagnostick.

As the first beginning the Cancer is not so easily known; because that at first it is scarcely so big as a Vetch or a Bean: but then afterwards, when it is grown, and hath gotten so much augmentation and enlargement that it is now lift up into a greater bulk, it hath with it then signs and symptoms so evident and so grievous, that it by any one may be most easily known. For this Tumor is hard, it hath a leaden, or wan, or blackish color; and yet notwithstanding this is more or less such, according to the diversity of the matter. There is present likewise a pain to attend it; the which (although it may indeed be sometimes greater, and sometimes less) yet notwithstanding the Cancer is never wholly without it. There is likewise present an heat, pulsation or beating; and round about (as it were in a Circle) it hath Veins distended, and strutting out with black Blood. Now although the *Scirrhus* arising from a melancholly humor hath some kind of likeness and affinity with a Cancer; yet notwithstanding by the aforesaid and other signs it may easily be discerned from it. For a Cancer hath evermore a pain and pulsation conjoynd therewith, together with an heat more than ordinary; and most commonly it beginneth of it self, and suddenly getteth encrease, so that from a very small and inconsiderable bigness it becometh exceeding great and bulky; and there is for the most part a humor residing in the Veins, which said Veins being

therewith filled very full resemble the Feet and Claws of Crevish or Craw-fish. But now in the *Scirrhus* there is no pain appearing; and for the most part it hath its original from the Change and alteration of other Tumors; and the humor that produceth the *Scirrhus* doth not chiefly and principally reside in the Veins, but in the spaces and Pores of the Parts; from whence also it is, that the Veins are not ample, wide, and large, neither turgid, and strutting out; and the increasing and growth thereof is much more slow than that of a Cancer. But now if the Cancer be already Ulcerated, then the Ulcer is nasty and stinking, the lips are swollen, thick, and pale or wan.

### The Prognosticks.

1. In the general, every Cancer is a most grievous and a dangerous Dilate; and such as is seldom or never cured. For the Cause thereof being over thick is obstinate and malignant; and oftentimes it seizeth and surpriseth even those Veins also that lie low and deep; insomuch that it cannot be removed and taken away, either by the purgation of the Body, or by Repellers, or Dissolvents, or cutting and lancing, or lastly, even by actual Cauteries and burning; for as for the milder sort of Remedies, it sleights and contemns them; and as for the stronger sort of Medicaments; it is by them exasperated.

2. Where there are secret and hidden Cancers; where it is best not to cure them; For they that are cured die within a very short time after, but those that are not cured of these aforesaid Cancers live a longer time, so saith *Hippocrates*, in the sixth of his Aphorisms, Aphor. 38. For why, those Cancers that before were not exulcerated when they have Medicaments applied to them may and do easily become exulcerated.

3. They likewise that have Cancers in the Cavity of the Body, or in the palate of the mouth, or in the Buttocks, or in the Womb, if they be either cut or burnt, the Ulcers cannot by any means be healed up, and covered over with a Cicatrice. But those that are thus affected while they lie under Cure are tortured and tormented (even to death) by the afflicting pain they undergo; whereas without a Cure (and if they shall not at all submit themselves unto the means tending thereunto) they may live a longer time, and with far less trouble and grievance; as *Galen* hath it in his Commentary upon the aforesaid Aphorism of *Hippocrates*.

4. Those Cancers only therefore are to be attempted in the way of Cure, which are and appear in the outward part of the Body; and there likewise it will be more safe to attempt the Curing of them by Medicaments in the very first rise of them (while they are yet but small and inconsiderable) than when they are grown and become great; for then they are not to be cured without the help of the Hand; (which we term the Manual)

nual operation) neither indeed so, unless they have their residence and situation in those parts that may without danger be lanced and burnt, together with the very Roots, that is to say, the Veins in them that are full of burnt or adust blood.

5. For when the Cancer hath once gotten possession of a great part; or when it sticketh fast in a more noble part, or any other that may not safely and conveniently be cut or burnt, it is then altogether incurable.

6. Yea moreover, (in the general) there are very many, and indeed the most Physicians, that are of opinion, that no Cancer confirmed and exulcerated can possibly be cured.

And it is oftentimes observed, That although Cancers be cut out, and now and then cured in the external parts; Yet notwithstanding, that the same have returned again either in the very same part, or else even in some other parts; as for instance, when the Cancer hath been cured in the paps or breasts another hath soon after risen and sprung up in the Womb. And therefore we ought rather, so far forth (and no further) to cure those Cancers that are already inveterate, and of the greater size, that their further growth and augmentation may be impeded and hindered.

whether an exulcerated Cancer be contagious?

Zacutus Lusitanus will have it to be contagious; & he proveth it, 1. From Reason.

Cardanus in his first Book of Poysons, and 12. Chapter, affirmeth that the Cancer is not contagious; and yet he giveth us no reason at all for this his Assertion; but presupposeth, and taketh it for granted, as a thing apparent and manifest. Neither (to my best remembrance) do I know any one, who accounteth and esteemeth the Cancer

to be in the number of contagious Diseases; excepting only *Zacutus Lusitanus*, in the first Book of his Practice, and Administr. of Physick, and 124. Observat. who doth it, and endeavoreth to prove it both by Reason and Experience. His Reasons are, 1. Because that in an exulcerated Cancer there is present a certain putridness and noysom stench (as it were of a dead Carcase) that by its purulency infecteth the body that is nigh unto it. His second Reason is, Because the Cancer is the same Disease with an *Elephantiasis*, and Leprosie of one only Member; but now the

An Answer thereto.

*Elephantiasis* is most contagious. But these his Reasons do not sufficiently conclude any thing. For first, All things that are putrid and ill savoured and noysom are not contagious. For in a Gangrene and *Sphacelus* there is an extraordinary putridness and stench; and yet notwithstanding the stender by is not

therewith infected. And moreover, although a Cancer hath some kind of similitude and resemblance with an *Elephantiasis*; they are yet notwithstanding several and different affects, as *Cardanus* in the place alleadged hath very rightly determined.

And therefore Experience is to be consulted. Now *Zacutus Lusitanus* in the place before al-

3. From Experience.

leadged bringeth in and produceth this Experience: He there writeth, That a certain poor woman having had a Cancer exulcerated in her Breast for many yeers together, and lying in bed with her three sons, they were all infected with the like contagion; & that she after five yeers dying, two of these her three sons seized upon and dispatched by this Disease departed this life; but the third (somewhat stronger of constitution than the other two) after that the Cancer had been cut away by the hand of the Chirurgion, with much pains and ado was cured and healed. But this being but one example, Experience is yet further to be consulted: and the rather in regard that it may be here objected, that those her sons might contract this Disease, not by contagion, but from an hereditary infection.

An Answer to the aforesaid Experience.

### The Cure.

As for what therefore concerneth the Cure of a Cancer not exulcerated, in the very first place (and this indeed is generally to be practised in all Cancers whatsoever) before any thing else be done, we are to use our diligent endeavor to prevent the encrease of black Choler, and that none be generated for the future; and that what is already in the body may speedily be evacuated. The breeding of black Choler and the Melancholy Humor is to be hindered and prevented by the Patients abstaining from those Meats that may any way yield and afford matter to the black Humor; such as are all things that are thick, feculent, salt, bitter; and such are old cheese, flesh that is thick, old, salt, or smoak-dried, Garlick, Onions, Mustard, Pepper, and all other Spices. Let the sick person likewise shun and avoid all those things that do any way conduce to the generating of the black Humor; such as are Grief, and sadness of the heart, overmuch watching and want of rest, and the like. But rather let the Patient use a Diet that is moderately moistening and cooling; viz. Pisan of Barley, Lettice, Mal-lows, Borrage, Succory, the four cold Seeds, Veal, Werber Mutton, Kids flesh, Chickens, Reer Eggs, River fish, the Whey of Goats Milk, and such like.

Further-

Furthermore, If there be any adust Humor already generated in the Body, let it be with all speed evacuated. And therefore in the first place (if it be at all requisite) blood may be drawn forth by opening a Vein. In Women, the provoking and bringing down their Courses will be most proper and convenient; and in men let the Hemorrhoids be opened, if it may be done. After this, let the body be thoroughly purged with those Medicaments that evacuate the black adust Humor; among which there is especially commended Epithymum, (we vulgarly call it Mother of Tyme) black Hellebore, Fumitory; and the Compounds thereof derived, viz. the Pills of Fumitory, and the Confection Hamech. But now that the Purgation may the better succeed, that thick and gross Humor is first of all to be prepared; yea moreover, whereas the whole Humor may not at once and all together be evacuated, then the Purgers and Preparers are often to be repeated, by turns, and successively. Now for this Afflict, those things that are very proper and convenient, are, the Syrup of Apples, of Fumitory, of the Juice of Borrage and Bugloss, Syrup of Lupulus or the Hop: or other Compound Medicaments like unto these. Neither will it be amiss, or any whit incongruous, likewise to strengthen the Heart and the Liver; and if there be any distemper chanced unto either or both of them, to amend and rectifie it by Medicaments, of Borrage, Bugloss, Roses, Citrons, Sanders, Corals, Margarites, Pearls, and those other Medicaments that are made and compounded out of these.

And then in the next place, we are to apply our selves unto the very part affected; And, 1. By Topicks the Matter that hath flown in is a little to be driven back again, and discolled; and the part is to be confirmed and strengthened; and those Medicaments that have in them a power and virtue of Repressing, Corroborating, and Discoling, are to be applied. For by this means, so much of the Cancer as is already generated is quite taken away; and likewise the further growth and increase thereof is prevented. But now, let those Medicaments have in them a mediocrity (or mean) of strength and virtue; and let them not be sharp and biting. For if the Medicaments be over weak, they then afford no help or benefit; and again, if they be too strong and violent, they then indeed either repress or discusse the more thin parts; but for the more thick, they do not only leave them behind, but also render them the more unapt and unfit to be afterwards discolled and dissipated. There is for this use and purpose very convenient, the Decoction or Juice of Nightshade, and of the several Species of Endive and Succory. But more especially there are commended the Cockle-fish boyled, River Crabs or Crevishes; and principally green Frogs, out of which there is a most excellent Oyl to be distilled, for the moderating of the pain, and the healing of the

Cancer; the distillation is by descent, after this manner:

Take Green Frogs, living either in the Reeds, or in pure and cleer Waters; fill their mouths with Butter, and afterward put them into an Earthen Pot that is glazed, and having in its bottom many little holes. Let this Pot be put into another Pot, and that other Pot put into and surrounded with the Earth, in the which it is to be as it were shut up: and then let as well the Pot that bath the Cover, as that Pot which is put into it be carefully luted and stopp'd; that so nothing may exhale. Afterward, let the fire be kindled round about the Pot on every side; and the Oyl will distill into the lower pot, which is to be taken forth, and together with the Powder of the Frogs mingled, for the making of an Unguent.

Others there are that make up an Unguent with the Ashes of Crabs or Crawfish mingled together with Coriander seed, and the Oyl of Roses. And here likewise we are to make use of the greatest part of Metallicks washed, and so becoming altogether without any biting quality (their power and vertue being here of singular use:) such as are Lead, Tutia or Pompholyx, Litharge, Ceruse, Antimony. Lead is chiefly and most highly commended by all; and it may likewise be administered any manner of way. Whereupon it is that all those Medicaments that are to be applied in the Cancer are most fitly and properly made up in a Leaden Mortar, with a Leaden Pestle, touching which Galen is to be consulted; see in his 9 Book of the Faculty of simple Medicaments, and the Chapter of Lead; which is made by rubbing together two Leaden Plates (whereon the Oyl of Roses hath been poured) so long until the Oyl become somewhat blackish, and that it hath gotten the consistence of a Liniment; or if in a Leaden Mortar the Oyl of Roses be stirred about with a Leaden Pestle, so long, that it likewise wax something black, and become thick. Or,

Take Oyl of Roses two ounces; the Juice of Nightshade an ounce and half; Ceruse or white Lead washed, Lead burnt and washed, of each one dram: Litharge, Frankincense, Pompholyx or the soyl of Brass, of each half a dram; White Wax as much as will serve the turn: make an Unguent. Or,

Take Terra Sigillata or the Sealed Earth of Lemnos, Bole-armenic, Ceruse, of each half an ounce; Tutia prepared two drams: Powder of green Frogs three drams: Litharge one dram and half; Oyl of Roses an ounce and half; Oyl of Frogs an ounce; Vinegar six drams; Wax a sufficient quantity: shake and stir them about for a good while in a Leaden Mortar, and so make an Unguent.

And indeed this is the safer way of curing Cancers that lie hid and secret in the body, and such as are not as yet exulcerated. For albeit Avicenna command



command that the lesser sort of Cancers (and such as may be perceived) be cut up by the very roots, and after this excision that the thicker blood should be pressed and squeezed forth on all sides, and round about, and that the place be afterwards seared and burnt with a Cautery, that so by this said burning the reliques or remainders may be consumed, the Member strengthened, and the Hemorrhage or flux of blood hindered; yet notwithstanding this kind of Cure hath much danger in it; and we ought here to remember that above alleadged 38. Aphorism, Section 6. For the Cancer (especially if any thing great) if it be wholly cut forth, and as it were stub'd up by the roots, then instantly there wil follow thereupon (the Veins and Arteries being cut asunder) an extraordinary and dangerous flux of blood; which if it be intercepted with a binder, then there will be an extraordinary great and grievous pain excited in the other parts; if they be seared and burnt, this likewise cannot be done without much inconvenience; and yet nevertheless there will be great danger of its returning.

*The Cure  
of an ex-  
ulcerated  
Cancer.*

But now, whereas the most are of Opinion that the exulcerated Cancer is not at all to be attempted or medled with, yet notwithstanding it being very inhumane to leave the sick person (even in such a Disease) altogether destitute of help and assistance, there is therefore by Physicians appointed and set down a twofold way and method of curing these exulcerated Cancers; the one true and genuine, which tendeth to the removal of the very Cancer it self; the other only Palliative (as they term it) which easeth, asswageth, and in some sort qualifyeth the Cancer, so that the sick person may live with somewhat the less pain and grievance. The true Cure is performed either by Incision, or Searing, or burning Medicaments; which indeed are most especially to be administered, if the Cancer hath not yet attained unto any considerable growth and bigness; or else if it be in those parts where it may without danger be cut forth, or burnt. It may be amputated and cut away even to the very quick, that so whatsoever is vicious and corrupt may be wholly taken away, so that there may be no fear left of any remaining contagion. And sometimes only cutting wil suffice, and by it the whol Cancer may be grubbd up even by the very roots. The amputation being made, the blood is not to be suppressed and stopd from flowing, before it shal manifestly appear that al thereof that is vicious and corrupt be flown forth out of the Veins: afterwards dry Liniments are to be put upon the part that was cut, and the Ulcer is to be concocted or ripened, cleansed, filled up with flesh, and a Cicatrice drawn over it, and so the Vein to be shut up. But sometimes again, if the Cancer be overgreat, and black Choler hath likewise seized upon the greater and deeper Vessels, then in this case

Section alone wil not suffice, but besides the said cutting burning is also to be administered. And therefore in the first place, that Skin being taken off, the Cancerous part it self, together with al the blackish Veins, is as much as possibly may be to be taken forth, and the blood likewise (according to the strength of the Patient) is not instantly to be suppressed and stopd, but rather to be further pressed and squeezed forth, that so al the black Choler may by this means flow forth of the Veins. After this the place is to be seared with a fire-hot Iron, that so the Hemorrhage and bleeding may thereby be stanchd, and the reliques of the malignant matter wasted and consumed. And at length those things that take away the crust, cleanse the Ulcer, generate and breed flesh, and produce a Cicatrice, are to be administered. But others (lest that the sick person should be endangered by the Hemorrhage and extream bleeding, or together with the loss of his blood should lose his life also, and lest the Chirurgeon by the flux of blood might likewise be hindered in his operation) do not in the like manner as aforesaid amputate the whol Cancer, and after that at length burn the whol; but first of al they cut off a certain part thereof, and then (after that a sufficient quantity and portion of the blood is flown forth) they burn and sear the said part; and then again a second time they amputate and cut off another part thereof, and again burn it; and thus in this manner, by turns iterating and repeating the Section and amputation, as also the burning and searing, they do at length quite take away the whol part affected with the Cancer. The Cancer may also be burnt with Caustick Medicaments, among which there is commended Sublimat Arsenick. But there ought to be a special regard had unto the places and parts that lie round about it; neither in this respect may crude Arsenick be (without much hazard and danger) thus administered. That Arsenick is more safe that is poured forth mingled, and fixed with *Salnitre*; or the Salt of Nitre.

But now, in regard that the great fear that here especially perplexeth Physicians is touching the recidivation and return of the Affect, those Medicaments therefore that evacuate black Choler are often to be repeated, and likewise those that have in them a power and vertue to draw forth the Hemorrhoids, and the Courses. Instead of which (if they be wanting) some there be that cause Issues to be made. But in this case, we are not only to administer such Medicaments as prepare and purge forth black Choler, but those likewise that resist and oppose poysons, and such as are known to be expedient in regard of their whol substance, and such as have in them the property and sovereign vertue of Antidotes. And for this purpose we are to administer Treacle and Mithridate, with Borrage, Cichory, and the Juyce or Syrup of Sorrel, the Broth of River Crabs out of Asses Milk, and

and the Antidote likewise that is made of their Blood.

*Antonius Chalmetus* (in all kind of Cancers) commendeth this Water; which he likewise useth nine daies before the excision, or cutting forth of the Cancer.

Take *Thapsus barbatus* or sweet white Mullein, the Root of Water Betony, of each two ounces; Dropwort, Spleenwort, Agrimony, Tormentil, Scabious, Avena, Toad-flax, of each one handful; Nettle seed three drams, Flowers of Elder, Rosemary flowers, of each one pugil or smal handful. Make a Decoction, which may be dulcified with Sugar; with some part of which Decoction the place affected may be likewise fomented, and thoroughly washed, and afterward a Magma or sweet Confection may be applied in the form of a Cataplasm.

The other way of curing the Cancer is that that we call a Counterfeit or Palliative Cure; by which we only use our endeavor that the Cancer may not be augmented and get any further growth; and that the pain thereof may be asswaged; that so the sick Person may lengthen out, and lead the remainder of his life with the less excruciating and afflicting misery. Such Medicaments are those that do not putrifie, neither corrode and bite the part, but do moderately dry and cool it; and they are such as are above mentioned; and more of them you may likewise see in the fourth Book of our Practice, Sect. 3, Part 1. Chap. 7.

### Lupus or the Wolf, and Noli me tangere.

There may be referred unto a Cancer (or at least, certainly, thereunto subjoynd) those Tumors or Ulcers which they vulgarly call, *Noli me tangere*, and *Lupus*, the Wolf.

Now some there are that divide the Cancer into three Species or kinds; into the Cancer that is by the Greeks & Romans absolutely and specifically so called, and which is commonly and well known by that name; into the *Noli me tangere*, and the Wolf. And they then only term it *Noli me tangere*, when there ariseth a Tumor or Ulcer upon the Chin, and especially about the Mouth and Nose, bearing a resemblance with, and being very like unto an exulcerated Cancer, growing and increasing very slowly at the beginning; which (as *Theodoricus* truly telleth us) continueth for one whole year no bigger than a Pustule, and is as it were a very smal and inconsiderable Pust; and which afterwards and at all times creepeth less than the Cancer: and *Rogerius* in his fifth Chapter writeth, that the Cancer doth corrode more in one day, than *Noli me tangere* doth in a Month. And it is so called, either because it ought not to be rubbed (since the more it is handled and rub'd the worse it becomes) or else in regard that it is a

Contagious Malady; or else lastly, because it is rather exasperated then mitigated by Remedies, and is thereby caused to creep into the sound parts.

But they call it *Lupus* or the Wolf, if it be in the Shins, Ankle-bones, and Thighs. But in all other parts of the Body, although it retain still the same pravity and malignancy, they conceive that it is not to be absolutely called *Lupus*. Yet notwithstanding (when it ariseth and appeareth in the midst of the Body) others term it *Cingulus*, a Girdle; as *Guido* tells us in his Sermon. 7. Tract. 4. Summ. 1. Chap. 24. but it is so named by reason of its vehement corrosion, and eating through. The vulgar People likewise will have it to be from hence so called, to wit, because like unto a hunger-starved Wolf it consumeth the Flesh of Hens, yea and other flesh also. This Opinion is indeed by *Job. Philip. Ingrassias* exploded, and termed a fatuity and vain foppery. But that some such thing there is done, is related and asserted by divers, and it is confirmed by the History that *Mauritius Cordaeus* relateth in his first Book, Comment. 7. upon *Hippocrates*, touching Women. There was (saith he) a certain Noble and Choice Woman, living nigh unto the Castle of Nenne, that had all the right side of her Face possessed and overspread with a Cancer, and that likewise exulcerated of a long time, insomuch that her Face was most grievously tortured with pains and griefs of all sorts. She having in vain and to no purpose at all sought for help unto the Physicians, as well French and Italian, as Spanish and Germans (together with other foreign Physicians) was at length perfectly cured by this following expedite and speedy Remedy that she had learned of an ordinary and vulgar Barber Chirurgion. She cuts Chickens into very smal and broad pieces, the which she daily applied unto the part affected, oftentimes changing and renewing them: and at length by this one only Remedy she recovered her former perfect health and soundness.

*Menardus* (in his seventh Book, Chap. 1.) referreth the Tumor *Lupus* or Wolf, and likewise the *Noli me tangere*, both of them to the Tumor *Phagedene*.

### Chap. 21. Of a Watry Tumor.

Here arise in like manner from a Waterish and wheyish humor divers kinds of Tumors; and from this humor it is, that sometimes certain parts of the Body, and sometimes again the whole Body is caused to swell up; of this nature and kind, are the Dropsie, *Hydrocephalus* or Head-Dropsie, Dropsie of the Lungs and Chest, *Hydrumphalus*, *Hydrocele*, Dropsie of the Womb, &c. touching all which having already treated in their proper places, we will here speak somewhat only in general concerning a watery Tumor.

*The Causes.*

The Cause (to wit, the next and immediate) of watry Tumors, is the collecting or gathering together of a watry or wheyish humor in some one or more parts. But now from what causes these watery & wheyish humors proceed and come to be gathered together, we have already declared where we treated of the *Hydrops* or *Dropsie*. Now for the place, the watry and wheyish humor is collected in some part that is loose, or that hath in it a Cavity or hollownes.

*Signs Diagnostick.*

These watry Tumors are soft, lax or loose, and without pain. If they be pressed and thrust down, the print of the finger that maketh the Impression doth not remain: and if we view them well either by day-light, or Candle-light, they appear transparent, and such as may welnigh be seen through.

*Prognosticks.*

1. The very watry Tumors themselves that are fomented and cherished by some vice or default in any of the Bowels are not at all dangerous.

2. But those that have their original from something amiss either in the Liver, or in the Spleen, although they are not in themselves dangerous, yet they do notwithstanding threaten danger, in regard of the Bowels that are ill affected.

3. Although watry Tumors are not dangerous; yet notwithstanding they are not easily cured, since that the humor is hardly or not at all to be concocted, and is likewise discussed very slowly.

*The Cure.*

That so the Cure may rightly be performed, the the watry humor which causeth and cherisheth the Tumor is to be evacuated and emptied forth; and speciall care must be taken that no more of it be generated in the Body for the future, and the humor is self that is in the part affected is to be evacuated.

In the first place therefore, the watry and wheyish humors are to be evacuated by Stool, by Urine, and by Sweats; and we must likewise so order it, that the *Diaphoresis* and insensible transpiration may be free and uninterrupted.

Secondly, If there be present any fault in any Bowel that is by Nature destin'd and ordained for Concoction (by which this watry humor is supplied) this is to be corrected; and of this we have already spoken in its proper place.

Thirdly, The watery matter (the next and containing Cause of the Tumor) is to be evacuated; which is to be performed, either insensibly by those things that Resolve and digest, and dry much; or else sensibly, by opening the Tumor,

and pouring out the Matter. Those things that Resolve, Discuss, and dry up the watry humors, are, Rue, Wallwort or Danewort, Elder, Camomile, Dill, the Flower-de-luce root, Aristolochy or Birthwort, Laurel berries, the Meal of Beans, and of the bitter Vetch *Orobis*, Athes, Salt, Sulphur, Ammoniacum, and Bdellium. As,

Take Leaves of Rue, of the Elder Tree, and Wallwort, the Flowers of Camomile, of each one bandful; Laurel berries two ounces; boyl them in Ley and Wine, for a Fomentation. Afterward.

Take Sal Nitre half an ounce, Sulphur three drams, the Powder of Laurel berries one ounce, Ammoniacum half an ounce, Oyl of Rue and Wax, of each as much as will suffice; and make a Liniment.

But if the matter cannot be discussed and scattered, then let the Tumor be opened, and the mater emptied forth.

*The Diet.*

Let such a Diet be ordained and appointed that may not in the least make any supply, or add unto the watry humors; and let it have regard unto the Causes of the collection of the watry humor; touching which we have also already spoken in its proper place.

### Chap. 22. Of Exanthemata, Echinymata, Papulæ, Pustulæ, Phlyctenæ, and Eczelmata.

But now it is very rare (and a thing that but seldom happeneth) that one only humor should excite and cause any Tumor whatsoever; but for the most part, many humors mixed together, and especially the Cholerick, Salt, and ferous or wheyish humors, meeting together (and sometimes also black Choler) do excite and produce divers sorts of Tubercles or small Tumors; of which we intend now to treat; and here in the explanation of their several names, we meet with much difficulty. And first of all, *Exanthemata*, and *Exanthesis* (that is to say, Efflorescences) are so called, in regard that like unto Flowers they break forth in the Skin. Hippocrates 3. Epid. Comm. Text 51. calleth them likewise *Ecthymania*, from the Greek, because they impetuously break forth, as Galen in his Comment upon Hippocrates explaineth it. Pliny (in his Book 24. and Chap. 4. and Book 26. Chap 11.) calleth them *Eruptiones*. But now the name [*Exanthemata*] seemeth to be a general name; so that it may comprehend under it whatsoever of its own accord breaketh forth in the Skin; neither indeed is there any certain and particular species of those Tubercles or small Tumors, whereupon it is that they are likewise called *Exanthemata Sublime* broad,



broad, red, round, smal, *Exanthemata* of sweats, *Elcoda*, by *Hippocrates* in his third Book of Aphorisms, Aphor. 20. But whether or no there be any general Latin word that may answer unto this *Exanthemata* of the Greeks, I very much question. We indeed meet with the name of *Papula*, and *Pustula*, that is to say, Wheals, Blisters, Measels, and Pusles. But now whereas there is a twofold sort of *Exanthemata*, one that which only chageth the color of the Skin (as it is wont to be in those Feavers that we call *Petechiales*;) and another, in which there are certain Tubercles breaking forth in the Skin, the name of *Papula* and *Pustula* seemeth not to agree with, and answer to both of them, but only unto the latter sort of the *Exanthemata*; for *Papula* and *Pustula* signifie only Tubercles in which there is some certain humor contained. And yet notwithstanding we find that the name of *Papula* is a more special name; and that it seemeth not to be used by *Celsus* and *Pliny*, in one and the same manner. For by *Pliny* the hotter sort of *Exanthemata*, and which are elevated higher than ordinary into a sharp-pointed head, are termed *Papula*; of which notwithstanding seeing that there are many differences (viz. red, hor, black, *Papula* of sweats) this name seemeth to be general enough. But now with *Celsus* the name *Papula* is a special and peculiar name, and signifies only that affect which the Greeks call *Lichenes*, and the Latines *Impetigo*. For thus he writeth (in his fifth Book, and 28. Chapter) That the *Papula* by the smallest sort of Pustules do exasperate the Skin, and likewise that they corrode and creep forward but slowly; and that where the Disease beginneth round, there it also proceedeth after an Orb-like and round manner; and that that which is less round is more difficultly cured; and that (unless it be taken quite away) it turneth into the *Impetigo*. For he maketh two species of *Lichenes*, as the Greeks likewise do. One he termeth *Agria*, that is, wild; the other more mild; and that the wild *Papula* is cured by rubbing it with fasting Spittle. All which things before mentioned agree with the *Lichenes* of the Greeks.

The name likewise of *Eczesmata* seemeth to be general. For although some by these *Eczesmata* understand only *Hidroa*, or *Sudamina*; and others refer them unto the Head alone; yet without all doubt this name is general, and signifies a Pustule, or very hot *Papula*, as the name it self importeth.

### Of the Tumors Phlyctænæ.

But that we may treat of these in their several species or kinds; the first in order to be handled are those we call *Phlyctæna*. Now they are called *Phlyctæna*, *Pbluctides*, *Pbluxacia*, and *Pbluseis* (from two Greek words that signifie to Boil or become fervent hot) being Pustules, and

little Bladders, excited and caused by the humors when they are as it were boyling hot, and most sharp; like unto those Pusles and smal Bladders that are raised by the fire, and scalding hot water. By others they are likewise named *Ignis Silvestris*, or wild fire. The Arabians call them *Sabafani*. And indeed these kind of Pustules and little Bladders very frequently break out in the Skin, or rather in the Scarf-skin; and sometimes privily in the Cornea Tunicle of the Eye; touching which we have already spoken in the first Book of our Practice, Part 3. Sect. 2. Chap. 17. They oftentimes arise in the Thighs; and in Infants they sometimes break forth in their whol body; but seldom so in men.

### The Causes.

The *Phlyctæna* proceed from a Cholerick and extreme hot humor, mingled together with a humor that is salt and wheyish. But now from what Causes such like humors are generated, we have elsewhere declared. They sometimes likewise befall women, by reason of their Menstruous blood over long retained and corrupted. But now those Humors are called forth unto the Skin, when any one having been in the cold suddenly approacheth neer unto the fire, or else betaketh himself to a hot Bath; and so on the contrary, when after heat the pores of the Skin shall be altogether close shut up by the external cold.

### The Signs Diagnostick.

The little Bladders that resemble those that are raised by the fire or scalding hot water do suddenly break forth; and when they are broken, there issueth forth by little and little a yellowish humor: the Crusts thereof wax hard, and then they fall off. By reason of the acrimony and fervent heat of the humor they excite an itching in the Skin.

### Prognosticks.

1. *Phlyctæna* (as *Aetius* tells us, Tetrab. 4. Serm. 2. Chap. 63.) abide and continue sometimes for two or three daies.
2. *Phlyctæna* if they be not wel and rightly cured, they now and then degenerate into an *Herpes*.

### The Cure.

If such like vitious humors abound in the body, then (in the first place) such a kind and course of Diet is to be prescribed that will not encrease those like Humors, but such as may rather correct that *Cacochymy*. And moreover, the said vitious Humors are by convenient Medicaments to be evacuated.

Now as for Topicks, let the *Phlyctæna* first be soomented with the Decoction of Lentils, Myrtle, and Pomegranate Rinds. Or,

Take the Mucilage of Fleabane or Fleawort seed,

seed, Rose water extract six ounces; the Juice of Purslane, and Nightshade, of each two ounces: mingle them, and let the place affected be anointed therewith.

If they break not of their own accord, and thereupon cause a grievous pain, they are then to be prickt and pierced through with a needle; and the Pustules are to be hard squeezed; and upon the Ulcer lay this following Cataplasme:

Take Barley Meal, the Meal of Lentils, and of Beans, the powder of Pomegranate Rinds, of each an ounce; with a sufficient quantity of the Oyl of Roses make a Cataplasme. Or,

Take the Leaves of Plantane, Mallows, Myrtle, of each one handfull; boyl them to a softness, and pass them through a hair sieve; then add unto them Barley Meal, the Meal of Lentils, and crums of white Bread, of each as much as will suffice, and make a Cataplasme.

Or else let a Liniment made of Swines Fat, with the Spume or Froth of Silver, in a Leaden Mortar, be laid on. Or,

Take Juice of the Root of sower Sorrel, and Scabious, of each two ounces; Oyl of Roses four ounces; the Fat of an old Hog six ounces; boyl them until the Juices be consumed; and afterwards add Litharge of Gold one ounce; live Sulphur six drams; Turpentine half an ounce; stir them wel together in a Leaden Mortar, and make a Liniment. Or,

Take Litharge, live Sulphur, Myrtle Powder, of each one ounce; stir them wel together with Vinegar in a Leaden Mortar; and adding thereto a sufficient quantity of the Oyl of Roses, make an Unguent.

See more of this in *Aetius*, Tetrab. 1. Sermon. 4. Chap. 21.

### Chap. 23. Of Vari or Pimples.

**V**ari are Tubercles or little Swellings somewhat neer of kin unto *Phydracia*, by the Greeks called *Joniboi*, because that like unto Dung they are the defilement and the disgrace of the Countenance, by fouling and disfiguring of the Face. *Galen* in his second Book of the Method of Physick, Chap. 2. reckons up these among those names that neither represent the place affected, neither the cause that produceth them. They are likewise by some named *Acne* or *Acna*, as *Aetius* tells us, Tetrab. 2. Sermon. 4. Chap. 13. Although *Hermolanius* in his Gloss upon *Pliny* reads the word *Acmas*, as if this kind of Affect were commonly so termed by the Greeks, in regard that it is wont to seize upon those that are of ripe and full age. *Celsus* in his fifth Book, Chap. 6. writeth thus: It is almost but a meer folly (saith he) to attempt the curing of these Vari or Specks, and Pimples in the Face, or the little Pusles and heat-wheals of the same. But Vari and Lenticulæ or Pimples, are very wel and com-

monly known: and yet notwithstanding you cannot possibly take from Women the care they take in tricking themselves up, and especially in trimming their Faces. In *Galen's* Opinion (as we have it in his fifth Book of the Composition of Medicaments according to the place, Chap. 3. and in his Book of making those Remedies that may be provided, Chap. 51.) *Jonthos* is an hard and little swelling in the Skin of the Face, raised from a thick Juice that is there gotten together. The which in regard that it is altogether void of the wheyish moisture, it is therefore not at all itching, neither doth it require or stand in any need of scratching.

This Humor is for the most part alimentary, insinuating it self into the Pores of the Skin. But yet there is likewise oftentimes therewithal mingled an excrementitious Humor, and atrabiliary blood.

### Signs Diagnostick.

We have before told you out of *Celsus*, that this Tumor is sufficiently and commonly known.

### Prognosticks.

1. This Affect hath in it no danger; so that *Celsus* thinks it meer folly to much as to will or desire the Cure of this Tumor.

2. Those Vari that arise only from the thicker and grosser Aliment, are firm and stable. But if an Excrementitious Humor be mingled with them, the Tubercles pour forth an Ichor or thin Excrement; and if they be suppurated they turn into Ulcers.

3. If together with the Pusles there be an Intense and extraordinary redness in the face, the Malady is then very hard to be cured, if not altogether impossible: and although the Pustules may be removed by strong Medicaments, yet the redness will notwithstanding remain, and encrease unto a higher pitch.

4. When there is a redness conjoynd with the swelling and puffing up of the Face, and a hoarseness of the voyce, this is a very shrewd sign of an approaching *Lepra*, or Leprosie.

### The Cure.

These Tubercles are to be cured by Emollients, Discussers, and likewise (unless they in a short time yield and give place) by corroding Medicaments. As for instance,

Take Meal of Lupines, of the bitter Vetch *Orobis*, of each one ounce and half; of Mallows peeled, and Flowerdeluce Root, of each two drams; Salt Ammoniac one dram; with Mucilage of Gum Tragacanth make Trochisques, which at the time of using them may be dissolved in Milk. Or,

Take Honey, and the sharpest or sourest Vinegar, of each one ounce and half. Mingle them.

Take

Take *Litharge of Gold* three drams; *Turpentine* half an ounce; common Oyl as much as will suffice: mingle them. Or,

Let the Face be anointed in the Evening with bitter Almonds wel pounded and made into a Mass, and so mingled with Vinegar; and in the morning wash the Face with Milk.

If the Vari be harder than ordinary,

Take *Black Soap* half an ounce; *Ammoniacum*, *Frankincense*, of each a dram and half; let them be dissolved in Water, that they may get the thicknes of a Cerote. Or,

Take the *Juyce of the sharp Dock* two ounces; *Vinegar of Squills* half an ounce; *Gum Ammoniack* dissolved in Vinegar two drams; *Borax* a dram and half; *Allum* half a dram; mingle them, &c. Or,

Take the *Root of sowr Sorrel*, and *Elecampane* cut into smal pieces, of each one ounce; *Hyssop* and *Penroyal Leaves*, of each half an ounce; boyl them in Vinegar until they be soft and tender, and then bruise them very smal. Add hereto of soft Soap half an ounce; *Ammoniack* dissolved in Vinegar two drams; *Myrrh*, *Frankincense*, *Borax*, of each half a dram; mingle them.

## Chap. 24. Of Sudamina, and Sirones.

**S**udamina (which the Greeks call *Hidroa*, and likewise *Exanthemata*) are with us those Efflorescences or Pusthes, or Wheals that stick and have their residence in the utmost Skin of the body, like unto the grains of Millet, that by their exulceration do exasperate the Skin. Some there are that wil likewise have them to be called *Eczematata*. By *Pliny* in his third Book, and Chap. 4. they are termed *Papula Sudorum*, or sweating Pustules. *Rhases* and *Avicen* name them *Asef*, or else (with the Article) *Alasef*, or *Hasef*, and *Alhasef*. It is an Affect that is very common and familiar unto Children and yong persons (especially those that are of a hot temperament and constitution, and such as in the hot Summer time use overmuch motion and exercise) happening and arising in the Neck, Shoulder-blades, Breast, Arms, and Thighs; but yet notwithstanding more frequently neer about the privy parts, and the Fundament or Arse; whereupon it is that *Hippocrates* in the third of his Aphorisms, Aph. 21.) reckons it up among the Summer Diseases.

### The Causes.

Now these *Sudamina* have their original from the many *Cholerick* and sharp biting sweats that corrode the Skin, and cause a roughness or ruggedness therein, exulcerate after the manner of Ulcers, and excite in the said Skin a certain kind of itching. And they arise more especially in a

hot and moist Summer, after the use of those things that are hotter and sharper than ordinary, extreame labor and pain, from inhabiting in a place hot and moist, a wind not sufficiently piercing and purifying, overgreat and excessive sweats; and lastly, the filthiness and nastiness of the Apparel.

### Signs Diagnostick.

These Tubercles are sufficiently manifest. For in the Skin there appear a roughness, and itching Pustules.

### Prognosticks.

The Affect is not in the least dangerous; but for the most part is cured by the help and strength of Nature, without the use and application of any Medicaments.

### The Cure.

And therefore let the Patients wearing Apparel be sweet and clean, and let him often chuse himself.

If the Affect be mild, gentle, and moderate, it is then cured by only wathing with *Rose Water*, or *Plantane Water*; unto which notwithstanding there ought to be added a grain or two of *Camphire*.

But if it be more grievous, and if that *Cholerick Humors* abound in the Body, they are to be altered and evacuated.

Afterward this Bath is to be made use of:

Take the *Root of sowr Sorrel*, and *white Lillies*, of each half a pound; *Briony* three ounces; of these Herbs following, viz. of *Mallows*, *Violets*, *Marsh-mallows*, *Pellitory of the Wall*, *Bears-foot*, of each one handful; *Fumitory* three handfals; the flowers of the *Water-Lilly*, *Red Roses*, and *Beans*, of each one handful; Bran two pound. Boyl them in pure and sweet Water for a Bath.

After the Bath, if there be occasion let this Unguent be administred:

Take Oyl of *Violets*, of *Roses*, of the *Water-Lillies*, or as some call it, the *Water-cress*, of each half a pound; *Juyce of Lemmons* three ounces; *Litharge* one ounce; *Ceruss* or *white Lead* half an ounce; *Camphire* one dram; let them be wel stirred together in a Mortar, and make hereof a Liniment.

### Sirones.

Hither likewise belong those Pustules that the Germans call *Seuren*, that arise either in the hollow of the Hand, or on the soles of the Feet, or both, in the which there lieth hid and secret an exceeding smal sort of Worms under the Scarf-skin, which they term *Sirones*, or *Chirones*. Now the Affect ariseth chiefly in these places, because that the more thick and gross *Ichores* or ulcerous Excrements are in every scabbiness detained and held



held under the Skin which in the aforesaid place is more thick than elsewhere.

### Signs.

We may know whether or no these Worms lie hid in the Pustules, if the itch that is here felt be greater than that which is wont to be (at other times) perceived in these places.

These *Cbirones* are (for the most part) digged forth with the Needle; and after this (that so they may not be bred anew) the place is to be well washed with Wine or Vinegar, in which Salt, Alum, or Nitre hath been dissolved; or else with a Ley that is made of the Ashes of Broom Sprigs, or the Boughs of the Oak Tree. After it hath been washed and thoroughly dried again, let it be annointed over with this Unguent following, viz.

Take the sharp Dock (or as some call it, sowr Sorrel) Scabious, Wormwood, Tansey, the Leaves of Peacher, of the Ash tree, of Henbane, and of the Walnut, of each one handful; let them be al well and thoroughly bruised together; and together with those Juices, take of the Fat or Lard of an old Hog, two pound let them boyl all together until the Juices be consumed: and afterwards add of Ship Pitch one pound and half; and let the whol be streined through a Cloth; and then,

Take Myrtle, Frankincense, Mastick, of each two ounces; let them be powdered very smal; and let them be put into the streining; and then let them be moved and stirred about with a Spatula until they have the likeness and consistence of an Unguent. And whensoever there is any occasion to make use of, and to do and act any thing herewith, then unto six ounces of this Unguent we may add one ounce of Quick-silver, extinguished and killed with fasting Spittle, or shaken together with the white of an Egg, and by this means you may Cure within fifteen daies all kind of Scabbiness whatsoever it be of this Nature, or those *Sirones* that are accompanied with an itching. And thus much may suffice to have been spoken touching these Tumors (or rather Tubercles) *Sudamina* and *Sirones*.

### Chap. 25. Of Epinyctides, and Terminthi.

**E**Pinyctis is so called, because it ariseth in the Night; as *Galen* (in his second Book of the Method of Physick, Chap. 2. and *Celsus* (in his fifth Book, and 28<sup>th</sup> Chapter) hath informed us. Yet notwithstanding *Paulus Aegineta* (in his 4. Book, Chap. 9.) and *Aetius* Terrab. 4. Serm. 2. Chap. 61. conceive that they are so called, not because it ariseth in the night, but because in the night time it doth more vehemently excruciate and torment the Party thus affected. But both

these reasons may very well stand together, to wit, that this Tubercle ariseth by night, and that it doth likewise in the night time most grieve & excruciate the Party affected therewith. *Paulus Aegineta* therefore, and *Aetius* (in the places alleadged) define the *Epinyctides* to be small Ulcers breaking forth of their own accord, like unto *Pblyctene* or Blisters, somewhat reddish, which being broken there issueth forth a bloody filth and matter. They do not greatly excruciate the Party in the day time; but by night they torture and torment him with a pain that is more then usual in an Ulcer. But yet, although *Paulus* and *Aetius* define *Epinyctides* by little Ulcers; yet notwithstanding without all doubt they understand Pustules degenerating and turning into Ulcers. Neither are they generated only of Choleric and bloody filth and corruption, but likewise from other humors also. And therefore *Pliny* in his Book 20. and Chap. 6. calleth them pale and wan Pustules, and such as disquiet in the night time. But *Celsus* in the place alleadged doth most clearly and plainly describe them, in these words; It is (saith he) the worst of all kind of Pustules, that is called Epinyctis. It is wont to be in colour either somewhat pale and wan, or somewhat black, or else white. About this there is also a vehement Inflammation, and within there is found a snotty and nasty exulceration. The colour is like unto its humor from whence it ariseth. The pain that it causeth is greater than its bigness, and transcendeth its magnitude, for it is bigger then a Bean. And it likewise ariseth in the eminent parts, and most commonly in the night time; for which cause it hath this name Epinyctis imposed upon it by the Greeks.

There are some that conceive these *Epinyctides* to be Effere of the *Arabians*; but they are mistaken, as it will appear by the Chapter following for Effere (unless it be very much scratched and clawed) poureth forth no humor at all.

### The Causes.

The Causes of this Tumor are a Salt and wheyish humor, and Flegm, together with which there is sometimes mingled some of the Blood, and Choleric Ichor, and now and then likewise some of the black Choler. From whence also it is that the colour is not alwaies one and the same, and by reason of the Flegm therewith mingled the Pustule being opened there is found within a certain snotty and fishy exulceration. And the Tumor is almost if not altogether such as that which causeth the Carbuncle, but only that there is here no malignity present; neither is the Tumor likewise here to great as it is in a Carbuncle; neither is it (as we told you out of *Celsus*) bigger then a Bean. But that it is more exasperated by night, the Cause hereof is a black humor (that is wont to be moved more in the night) and the nocturnal cold, which shurteeth and closeth up the Pores of the Skin.

Signs

*Signs Diagnostick.*

It is not at all needful that we declare the signs and tokens of this Tumor; since that it may be sufficiently known from the aforementioned description of *Celsus*.

*The Prognostick.*

To tel you the truth, these Tubercles are not dangerous; and they denote the strength of the expulsive faculty: yet notwithstanding they are very grievous and troublesome by reason of the pain they cause; and they bring restlessness likewise upon the Party in the night time, and they signifie that an aduft and vicious Juyce doth superabound in the body.

*The Cure.*

And therefore the naughty and vicious humor is to be evacuated; and if the blood too much abound, a Vein is then to be opened; and withall there is such a kind of Diet to be prescribed that may not generate and breed an aduft humor.

As for Topical Remedies, such a like Bath, or Lotion, may be appointed, *Viz.*

Take *Mallows*, *Violets*, *Pellitory of the Wall*, *Bearsfoot*, of each three handfuls; *Nightshade* one handful; *Marshmallow seeds*, and the four cold seeds wel bruised, of each one ounce; boyl them in sweet water, for a Bath.

*Paulus* and *Aetius* commend the liquor of *Laserpitium*, with salted water, in regard that it drieth without any corrosion at all; as also the Leaves of the *Hemlock* or *Henbane* bruised and pounded smal together with *Honey*; as likewise the *Green Coriander*, and *Nightshade* bruised and mingled together; or the Leaves of the *Wild Olive* bruised. For those *Ulcers* that spring and arise from *Pustules*, this following Medicament is very proper and convenient;

Take *Ceruss* half an ounce, *Litharge* one ounce and half; *Fenugreek seed* half an ounce, *Roses* two drams, the Juyce of *Endive* as much as wil suffice; let them be mingled and stirred together until they attain unto the thickness of *Honey*, or a *Liniment*: but let there be a careful abstinence from whatsoever is sharp, acid, and salt.

*Terminthus.*

Some there are that refer likewise *Terminthus* unto these *Epinythides*. But it doth not yet sufficiently appear what this Tumor *Terminthus* of the Ancients is properly; but only what we have from *Galen*, who in *Epidem. 6. Comment 3. Text. 37.* thus writeth; that the name of *Terminthi* doth signifie certain black *Pustules*, arising especially in the *Thighs*, derived from the likeness and resemblance they have in figure, colour, and bigness with the fruit of *Terminthi*, that is *Cicers*, (as they vulgarly render it; but as others, and that more rightly, the fruit of the *Turpentine Tree*.)

## Chap. 26. Of Effere.

There is also a certain kind of Tumor (which we but very seldom meet with in the writings of the *Greeks* and *Latines*; but oftentimes mentioned by the *Arabians*, and now & then likewise by the *Physicians* of our own time, such especially as live neer us in our own Country) which they cal *Effere*, *Sora*, and *Sare*; to wit, when little Tubercles, inclining to a red colour, and somewhat hard, do suddenly and unexpectedly seize upon the whol Body, together with an extraordinary & troublesome itching; Just as if the Party had been bitten and stung by *Bees*, or *Wasps*, or *Gnats*, or stung with *Nettles*; and yet notwithstanding so that after a long time they vanish again; & the Skin likewise (without the issuing forth of an ichorous excrement, or any other moisture whatsoever) recovereth its former smoothness and colour. There are some indeed that refer these kind of Tubercles unto the aforesaid *Epinythides* of the *Greeks*; but they are herein mistaken. For *Epinythides* and *Effere* are Tumors altogether differing one from the other; in regard that *Epinythides* pour forth out of them a certain humor, which *Effere* doth not, but vanisheth without any kind of humor issuing therefrom. Moreover the *Epinythides* (according to the name they have thereupon imposed on them) do afflict and grieve the Patient most of all in the night time; but the *Effere* very rarely break forth in the night, but (for the most part) in the day time. The way and Method of Curing them is likewise very various and different.

It is somewhat doubtful whether or no this kind of Tumor was at all known to the *Grecians*; since that we meet not (in any of their writings) with the true and proper kind of this Tumor; neither do they make any the least mention hereof; unless haply there be any that will refer this Tumor *Effere* unto *Exanthemata* that are without any Ulcer.

*Serapio* in the fifth of his *Breviary*, and *Chap. 8.* maketh a twofold sort of this Tumor, differing according to the Nature and quality of their Causes. The one he deriveth from cholerick blood; the other from a salt and nitrous *Flegm*; but this more rare. Others there are that assert that this kind of Tumor doth arise from an exhalation or vapour of hot servent Blood, or else the admixture of the *Cholerick* and *Salt* humors.

*The Causes.*

Whosoever knoweth and understandeth the Nature of serous wheyish humors will not deny that such like Tubercles may possibly be excited from serous or wheyish humors, being such as are sharp and easily moved, and likewise such as without much ado vanish and are dissolved. Which appeareth, and may be confirmed even from hence, that

that this Malady may be, and is removed especially by Venesection or blood-letting, which said Venesection doth chiefly and principally qualifie and allay that extream and fervent heat of the ferrous and wheyish part of the blood. Yet notwithstanding the itch that is sometimes greater, and sometimes less, likewise teacheth us, that there is not one alone difference of this wheyish humor; but that sometimes this said whey is more mild and moderate, and sometimes again more sharp and hot; sometimes thinner, and sometimes thicker; as likewise thus much (which I my self have very often observed) that these Tubercles (while the Patients are in a hot place) they then break forth and appear, and that when they expose themselves unto a cold Air, the Effere then vanish; and as soon again (on the contrary) to bud forth in the cold Air, and to vanish in a hot place: the former whereof seemeth from hence to happen, to wit, because the humor is very thin and moveable, and therefore is instantly driven in again by the cold ambient Air; but the latter, because the Humor is not altogether so moveable and thin, but somewhat more thick, which for that very cause cannot transpire in a cold Air; but in a hotter Air it wil transpire or breathe through.

But this wheyish and thin Humor is for the most part generated from the fault of the Liver; which from some preternatural cause is disposed to generate and breed this humor. Now that said Humor waxeth extreamly hot from the Causes Procatartick (as they cal them) that stir and move the blood. And this happeneth likewise in the Winter time, and in cold Regions, rather than in hot.

### Signs Diagnostick:

It is easily known by those notes and marks that are above mentioned; to wit, there sometimes goeth before an Ulcerous Lassitude; and then there break forth in the whol body itchy Pustules; as if the party had been pricked by Bees, or stung with Nettles.

### The Prognosticks.

1. These Tubercles vanish of their own accord within a very short space, although there be no course taken for the curing of them; and they are not suppurated; neither doth there issue forth of them any humidity at al. And if this should sometimes so happen, yet this chanceth rather by reason of the scratching of them, and also from the vehemency of the Itch (which is extream troublesome to the sick persons) than by means of the Tumor.

2. Sometimes these Effere go before Cholerick Feavers; and therefore such as are very frequently molested and grieved with these Tubercles ought not in any case to neglect the Cure, lest that they fall into Feavers, and some more grievous Disease.

### The Cure.

For the most part, there is no need at al to administer Topicks; but if the fervent heat of the Blood and Humors be (by Venesection and the administering of Medicaments that alter) qualified and kept under, the Tubercles wil then soon vanish, and the smoothness and Natural color will forthwith return unto the Skin. To wit, in the first place a Vein is to be opened, and to much of the blood drawn forth as the state and condition of the body requireth. And afterwards, if there be any need at al thereof, the Cholerick and wheyish Humor is to be drawn forth by Tamarinds, Myrobalans, Rheubarb; afterward let there be administered the Juyce and Syrup of Pomegranates, Ribes, Syrup de Agresta, or Varjuyce, Whey; with the Emulsion of the four cold seeds, and the like; Milk tart and fowr, &c. It is likewise very requisite to put the sick person into a Bath of warm Water.

Let his Diet likewise be cooling and moistening.

### Chap. 27. Of Scabies, or Scabbiness.

Scabies or Scabbiness ariseth likewise from S aduft matter, as doth also the Itch; that is (as it were) a certain *Preludium* and forerunner of Scabbiness, and the like Affects. Now Scabies by the Greeks and Latines is called *Psora*, an Affect sufficiently known; in the which there is not only present some kind of foulness and deformity of the body, but a distemper also even of the very Skin, together with a swelling and exulceration; from whence it is, that the actions of the Skin are likewise hurt. But more especially, in the Scabies or Scabbiness, the top and utmost part of the Skin is affected; insomuch that out of it (as Galen tells us in his fourth upon the Aphorisms, and the 17. Aphor.) there is some such like thing cast forth, that beareth a likeness and resemblance with the casting of Serpents. From whence it likewise differeth from the Itch: for in the Itch there is only a roughness of the Skin, in which there is nothing that falls off notwithstanding the scratching; whereas in the Scabies there is not only a roughness of the Skin, but likewise a distemper with a swelling; from which (by scratching) the bran-like bodies are easily and readily separated; and together with them divers Ichores likewise, and filthy purulent Excrements.

### The Causes.

But what the Cause of the Scabies is, in this Authors seem not so wel to agree. Galen in his Book of Tumors, Chap. 1. & 3. tells us that Sa-  
bier



bies also, and *Lepra* are Melancholick Affects; and likewise in the seventh Sect. Aphor. 40. that *Cancers*, *Elephantiasis*, *Lepra's*, and *Psores*, are all of them Melancholy Affects; and the same he also tells us in other places. But *Avicen* in the seventh Book of his fourth Tome, Tract. 3. Chap. 6. writeth that the matter of *Scabies* is the blood; with the which *Choler* is mingled, and that converted into Melancholy or salt flegm: and with him the other Arabian Physicians agree. But the very truth is, that although in the *Scabies* the humor be not alwaies one and the same, yet in every *Scabies* there is some kind of mixture of the adust and melancholy, hot and dry humor. And furthermore, there is one sort of *Scabies* that is moist, another that is dry. The moist, in the which there floweth forth a certain matter that is moist, and withal rotten, filthy, and purulent; but the dry is that in which there is but little or none of the aforesaid matter cast forth. And concerning this latter it is that *Galen* seems to speak, as being such wherein that melancholy humor doth more superabound. But *Avicen* and the rest of the Arabian Physicians understand hereby all kind of *Scabies* whatsoever. Now albeit the next cause of *Scabies* be a humor sharp and salt; yet notwithstanding *Avicen* doth not altogether absurdly assert that blood is the matter of the *Scabies*. For seeing that *Scabies* is an Univervsal Affect of the whol Body, it cannot therefore easily proceed from any other humor, unless that blood be likewise therewith mingled; and yet notwithstanding the blood cannot properly be said to be simply the cause of *Scabies*; to wit, so long as it retaineth its benign and temperate Nature. For whilest it continueth benign and good, it can in no wise excite and cause the itching, neither yet those Ulcerous Tumors or Swellings. Wherefore, before such time as the blood can possibly produce and breed the said *Scabies*, it must of necessity be corrupted, and other humors that are sharp and biting therewith mingled. And true it is indeed, that yellow *Choler* is sharp and corroding, but then it scarcely floweth in so great abundance, or is of that thickness as to excite such like Tumors. But black *Choler* and salt *Flegm* are Humors very fit and most apt to produce the said *Scabies*. For these Humors being thick, hot and dry, and withal biting and corroding, if they chance to be thrust forth unto the Skin, there they stick fast in it; and there they excite a hot and dry distemper, an itching, a swelling, and an exulceration.

But now as for the primitive Causes (and more especially for the generating and breeding of those salt, biting, and sharp humors) the kind and ordinary course of Diet that is kept doth exceedingly advance and further the same, Meats (to wit) of a bad juyce, and that afford an unwholsom and corrupt aliment; such as are salt, sharp, and that are easily corrupted. And hence it is, that the

poorer sort of people (who live upon these kind of unwholsom corrupt meats) are most frequently infested with the *Scabies* or Scabbiness; as likewise Children, and yong people in general, in regard that these are altogether careless and heedless in their Diet; whereupon they contract great store of excrements, that being retained in the outward part of the body are there corrupted, and so they get an acrimonious quality. But then from these bad and naughty meats those sharp and salt humors are the more easily bred if there be present a hot and dry distemper of the Liver. And hitherto likewise relateth the uncleanness and nastiness of the body, to wit, when there is altogether a neglect in the keeping it sweet and clean; and if the foulness and impurities of the Skin be not duly washed off, or the garments not shifted and changed often enough; whereupon it is, that filth and impurities sticking in the superficies of the body do not permit to free a passage forth unto the excrements; and by this means the said excrements acquire a certain acrimony, and so corrupt the other humors. The *Scabies* ariseth likewise somtimes after a Cris, and after Diseases both acute, and those also that are of a long continuance; to wit, when Nature expelleth forth unto the Skin those naughty and depraved humors, which it is not able any other way to discuss and evacuate. And lastly, *Congium* is likewise accounted and reckoned up among the principal causes of *Scabies*; which cause *Galen* also acknowledgeth, in his first Book of the Differences of Feavers, Chap. 2. and Book 4. of the Differences of Pulses, Chap. 3. For in the Superficies of the Skin of those that are Scabby there is a certain viscous and clammy moisture gathered together, which being either by the Apparell, or by some other means communicated to the body, corrupteth the humors therein, after the like manner, and produceth the like Affection, and that especially in these bodies that are now already disposed unto the *Scabies*. And indeed the humid or moist *Scabies* is the more contagious, in regard that in this there is generated more of the aforesaid viscid and clammy humidity.

### The Differences.

Some there are that reckon up very many Differences of *Scabies*; as that one is new, another old and inveterate; and that one seizeth upon the whol Body, another upon the Hands only, and the Thighs: but the main and special Difference is that which is taken from the Difference of the Humors; that one ariseth from a black and melancholy humor, (and this is called a dry *Scabies*) in which although there be a concurrence of other humors, yet notwithstanding the greatest part thereof is of this last mentioned humor; from whence it is, that out of the parts affected with this *Scabies*, either there is nothing at all sent forth; or if there be any thing issuing out,

it is thick, dry; and the Ulcers themselves, as likewise the prints and footsteps (as we may so term them) of these Ulcers are wan and pale, and sometimes black: another is humid and moist; in which there aboundeth a salt flegm; out of which there plentifully floweth forth much moist filth and corruption, that is thin and subtil, sharp; and now and then likewise it will be thick.

### Signs Diagnostick.

The *Scabies* or Scabbiness, is an Affect very well known, and it may easily be discerned, (as may also its Differences) and from those signs and tokens especially that we but even now mentioned. And yet notwithstanding those signs do now and then vary, and are something changed, according as the adustion of the other humors is greater or less.

### Prognosticks.

1. Now although the *Scabies* be in this respect troublesome, to wit, in regard of the foulness and deformity that it causeth in the Skin, rather than that it bringeth with it, or threateneth any other danger nigh at hand; and that in youth it oftentimes preserveth, and likewise freeth from other Diseases: yet notwithstanding it is not alwaies secure and safe. For if it be of any long continuance, it may (and sometimes doth) turn into the *Lepra* or Leprosie; and in Ancient persons it is contumacious and stubborn, and hard to be cured.

2. And among the several species and kinds of them, the dry is more difficult in curing than the moist. And therefore (whatever kind or sort it be of) it is not at any hand to be neglected; but by a due and fit Cure (even for the very deformities sake, if there were no other cause) speedily to be taken away and removed.

Of the *Scabies* reitring inwardly.

That *Scabies* that hath its rise and original, not from any contagion, but from some internal default of the humors, for the most part breaketh forth (as it were) critically, and ariseth from some internal vice of some one or other of the Bowels; in which so soon as any vitious humors are generated, they are immediately by Nature thrust forth unto the outward part of the body: the which motion if Nature be not able to perfect and accomplish it; or in case she be by Medicaments administrated unseasonably hindered

Many Diseases proceeding therefrom.

in her operation, divers Diseases are from hence excited. Touching the Quartan we have spoken before, where we treated of Feavers. There are oftentimes other Feavers, (long continued, and sufficiently dangerous) and likewise very often intermingling Feavers; but for the most part, they are inordinate Feavers that arise in this manner, and by this means. Of this I

here cured (in the year 1636, in the month of April) a certain man of a melancholy Constitution; and who had withal likewise a continued Feaver, together with a sore and very grievous Cough, by means of which he cast forth and brought away much Spittle, and sometimes also great store of blood; he was likewise afflicted with a difficulty and shortness of breathing, insomuch that there was now great cause to suspect and fear a *Phthisis* or Consumption. Now having for eight daies made use of Medicaments to very little purpose, I made a further and more strict enquiry into the Cause of the Disease; and then the Patient gave me to understand (which until now he had concealed from me) that before he was taken with this Disease he had the *Scabies* (or scabbiness, as we call it) the which was no sooner vanished and gone, but this Feaver and Cough followed thereupon. The which I no sooner came to understand, but that I used the utmost of my endeavor, (by Medicaments made of Fumitory, and such like) to cause the Scabs again to break forth. Which I had no sooner effected, and administrated such other Medicaments as I thought fit, but both the Feaver and the Cough ceased; and the man is yet living, and perfectly found, without any the least fear of a Consumption.

I have told you elsewhere of a certain Student; this man affected with this *Scabies* (after, and immediately upon the striking in of the Scabs) became instantly blind, and for two daies could see nothing at all; this his blindness was likewise accompanied with an extraordinary straightness of the Breast, difficulty of breathing, and black Urines. This man upon the use of fit and convenient Medicaments that were administrated to evacuate the adust humor (as Fumitory, and such like) within four daies recovered his sight again. The same party (a quarter of a year after) being again afflicted with the same Malady did not lose his sight as formerly, but had one fit of the Falling-sickness. But yet notwithstanding, having had fit and proper Medicaments prescribed him, he again recovered.

I have likewise seen many that from Scabbiness have been surprized and invaded with prickings and shooings in the Breast, with the bastard Pleurisie, and dangerous stiches, and likewise with the *Cachexy*. I knew also a youth (aged fourteen years) that upon the unseasonable use of inunctions (against the *Scabies*) made his Urines black, lost his sight; and at length being seized upon by the Epilepsie (and the fits thereof being become very frequent) in the end he died thereof. Wherefore we say that this *Scabies* is no way to be sleighted,

An example of a continual Feaver from the Scabs reitring inwardly.

Another example of blindness from the same cause.

And likewise of the Epilepsie.

And many other discomforts and inconveniences arising from the same cause.

fleighted, neither driven inwardly, or up and down; and if it arise from any internal vice of the humors, and the Cacochymy, then externall Medicaments are by no means to be administred before the use of Purgers, and other internal necessary Medicaments.

But now what hath been said touching the Scabies or Scabbiness; the same is likewise to be asserted touching the Achores or running sores in the Head, yielding a thin excrement in Infants. Concerning these Hippocrates (in his Book of the Epilepsie or Falling sickness, which he calleth *Morbus Sacer*) writeth thus;

*Those Infants (saith he) that have Ulcers breaking forth upon their Heads, and upon their Bars, and upon the rest of their Body; and such as spit often, and abound with Snor, these are they that in the progress of their age live most at ease. For hither floweth (and from hence is likewise purged forth) that Flegm which ought to have been purged in the Mothers Womb; and these Infants that are thus purged are never seized upon by the Falling sickness. Whereas on the contrary, if either the Physicians, or the Women-Doctors (as they call them) do without due caution and unreasonably administer astringent and Repelling Medicaments, and thereby heal up the said Achores, the Infants must then unavoidably fall into Feavers, the Epilepsie, Convulsions (the vicious humor retiring and running unto the internal parts) and sometimes likewise they (within a very short space) even die hereupon.*

### The Cure.

Now therefore in the first place, there is a due care and regard to be had in point of Diet; and there must be a totall abstinence from those Meats that generate adust and salt humors; Viz. all things that are salt, sharp, bitter, Oyls themselves, and whatsoever partaketh of an oily Nature: and on the contrary, Meats of a good and wholesome Juyce are constantly to be fed upon. And this may also be observed, and taken for a general rule, that it is more convenient that the food that is given unto Persons that are thus affected (to wit, with Scabbiness) be rather boyled than either rosted or fried. For what is either roasted or fried, doth especially generate a more sharp and dry humor. After this, the acrimony & sharpness of the humors is to be qualified and tempered; and the distemper of the Liver is especially to be reduced unto its pristine Natural state; and the salt and sharp humors are likewise to be evacuated. And therefore (in the very beginning) the first waies and passages (as we term them) are to be purged and emptied; as for example;

Take *Elettuar. Diabolic.* half an ounce, Powder of prepared Sene half a dram; and so with Sugar make a Bole.

If there be present any extraordinary store of Blood, that the humors are overhot, it will then be very requisite and proper to open a Vein in the Arm. For Nature is wont to expel the vicious humors out of those greater internal Veins unto the external branches, and those that lie under the Skin; which from thence (a Vein being opened) are together with the Blood evacuated.

Afterwards (in a moist Scabies from salt Flegm) Preparatives are to be administred, of Cichory, Agrimony, the Hop, and Maiden-hair; and Purgers of Agarick, Rheubarb, and Sene Leaves. In a dry Scabies, Preparers of Fumitory, Borrage, Bugloss, Violets; and Purgers, of Epithymum (we commonly call it Mother of Tyme) Polypody, Sene, black Hellebor: from whence (for this present purpose) various forms and Receipts may be made and compounded. As,

Take the Roots of Cichory one ounce, Polypody, sowr Sorrel, the inward rind of the black Alder Tree, of each half an ounce; of Sassafras wood, rasped Liquorish, of each two drams; Fumitory, Sorrel, Agrimony, Scabious, of each one handful; Epithymum, the Flowers of Borrage and Bugloss, of each half a handful, Raisins one ounce and half; boyl them in a sufficient quantity of common water, or else Whey; and for two pound of the streining clarified, add of the Syrup of Endive and Cichory with Rheubarb, of each half an ounce; of Elder Vinegar, two ounces. Mingle them well together, and let the Patient take hereof four or five ounces. Or,

Take Cichory roots six drams; Licorish three drams, Fumitory two handfuls, Endive one handful, Flowers of Borrage, Violets, Bugloss, of each half a handful; the seed of Melons, and Endive, of each one dram; the Leaves of Sene one ounce, the Rinds of Mirebolans Citrin. and Ind. of each half an ounce; Polypody of the Oak five drams, the whitest Agarick four drams, choice Rheubarb two drams, Spike one scruple, Cinnamom, and Ginger, of each half a dram; let them boyl in a sufficient quantity of Scabious and Fumitory water for two lib.; let them stand for one night, and afterward strain and clarify them; and let them be aromatized and spiced with Lign. Aloes, and red Saunders, of each one scruple. The Dose is four or five ounces. Or,

Take the Decoction of Sene nine ounces, Syrup of Fumitory, Epithymum, and of Cichory with Rheubarb, of each two ounces; Mingle and aromatize them with Cinnamom, and Spec. Diarrhod. Abbat. half a dram; give hereof at once four or five ounces. Or,

Take Fumitory one handful, the four Cordial Flowers of each one pugil, Epithymum half a dram, rasped Liquorish two drams, the Leaves of elect and choice Sene three drams, black Hel-



lebere one scruple, Polypody of the Oak three drams, Raisins stoned two drams, Anise seed one scruple; boyl for four ounces. In the streining infuse of the most choice Rbeubarb one scruple, Cinnamon half a scruple, Spike and Schenamb, of each three ounces; unto the streining pressed forth add of the Syrup of Fumitory, and Bizantin, simp. of each three drams; Make herewith a Potion to drink; and let it be taken down as often as need requireth.

If it be requisite, and that the Body stand in need of any further purging, then let the stronger sort of Purgers be administered. As,

Take Confection of Hamech three drams, Elett. Roses of Melues one dram and half, and so make a Bole. Or, dissolve these Eleuataries in the simple water, or the Decoction of Fumitory, three ounces thereof; and then add Syrup of Epithymum and Fumitory one ounce, and mingle them: After other preparations and purgations, we may then safely use the infusion of black Hellebore, in this manner prepared.

Take the roots of Cichory, and Polypody of the Oak, of each one dram and half; Fumitory half a handful, Flowers of Borrage, Bugloss, and Cichory, of each one pugil; Epithymum and Raisins, of each two drams; boyl them for five ounces: in the streining infuse for the space of one whole night, of the true black Hellebore a dram and half, Cinnamon one scruple, Carrots and Anise seed, of each half a scruple; Cloves five grains; unto the streining pressed forth add Syrup of Fumitory, and of Cichory with Rbeubarb of each three drams; Let them be aromatized with one scruple of the Species of Diarrhodon Abbatis.

But more especially there is here to be administered (as that that is of singular benefit) the Whey of Milk, and chiefly that of Goats Milk; which indeed (in the moist Scabies) may first of all be administered, with one ounce of Succus Rosarum or the Juice of Roses, that it may withall purge; and after for four or five daies may only alter. If the Scabies be dry, then there may be added two or three ounces of the Juice of Fumitory, or also two ounces of the Emulsion of the seed of Melons; and thus it is a most efficacious Medicament both against the Scabies and the Itch.

Or else the Whey may likewise be prepared after this manner.

Take the Whey of Goats Milk one quart, Mirbalans bruised two ounces, Epithymum one dram and half; infuse them for a night, and in the morning give the Patient one ounce of the streining. Or,

Take the Roots of Cichory, Fumitory, Sorrel, the Sprouts or tendrels of Hops, Agrimony new gathered, of each one handful; Wormwood and Rosemary of each one pugil; boyl all these in a sufficient quantity of Goats Milk while it is yet warm, until a fourth part thereof be consumed.

Afterward let there be dropt thereinto two or three spoonfuls of Elder Vinegar; and when the Milk is Curdled, the thin and cleer Whey may be taken in the morning, either alone, or (which is better) with the Syrup of Cichory with Rbeubarb.

When the Body is sufficiently purged, then it wil not be amiss to administer those things that provoke Sweat. As,

Take Treacle, and Mithridate, of each one scruple, the thickned Juyc of Fumitory half a scruple, Syrup of the Juyc of Sorrel, two drams; dissolve them in Fumitory Water, and so let them be taken in the morning; and the Patient being wel covered in his Bed, let him Sweat for some hours. For this use and purpose, Fumitory alone may be administered, and so may Pimpernel, Columbines, and Elder. But if the Scabies be stiff and stubborn, and wil not yield unto the Remedies aforesaid, we may then also use the Decoction of Sarsaparilla; unto which notwithstanding it will not be amiss to add, and therewith to mingle the Water or Syrup of Fumitory.

When these things have been made use of, we are in the next place to berake our selves to Topicks. And here we commend unto you (in the first place) the use of Baths, as wel sweet Baths, as Mineral and hot Baths, among which those that proceed from Sulphur are chiefly commended: the continual use whereof, notwithstanding since that it doth extreemly dry, for this reason it is sometimes requisite and convenient in a dry Scabies, by turns to make use of the sweet and Sulphury Baths, so that the Patient make use of the sweet Baths twice, and four times of the other, to wit, the Sulphury. For by the only use of such Baths, and Whey alone, even the most contumacious Scabies is oftentimes cured. But seeing that those mineral Baths are not every where to be found, we may therefore substitute and appoint others in stead of them, that have a faculty and power to digest and cleanse, and to open, thoroughly cleanse, and purge the Pores of the Skin; which if they be mingled together with those things that cool, and mitigate the pain and itching, you have then a most excellent and soveraign Remedy. As,

Take Alum one ounce and half, Sulphur two ounces, Nitre one ounce, Salt a handful; Make hereof a Powder which may be cast into a Kettle full of warm water. Or,

Take Common Salt half a pound, Alum three ounces, Vitriol four ounces, Tartar and Nitre, of each two ounces; let them be thoroughly bruised, and then cast into the Bath.

In the Bath there may likewise be boyled, Mallows, Fumitory, Scabious, Mugwort, Bees, the Root of sour Sorrel; and a Bag hung therein, filled with Bean meal and Bran. There may likewise this following Bath (or such like) be provided. Viz

Take

Take Roots and Leaves of the fowr Sorrel three handfuls : Elecampane Root three ounces : Briony half a pound : Mallows, Scabious, Fumitory, Selandine, Sopewort (which some call Bruisewort) of each two handfuls : whol Barley, Lupines, Beans, of each half a pound : Bran one pound : Camomile flowers three handfuls : boyl them for a Bath.

For this same use and purpose, Liniments likewise and Unguents are prepared; a great number whereof we meet with every where in Authors. They are compounded and made (as I have told you) of such Medicaments as cleanse and purge the Skin; such as are Nitre, Flowerdeluce, bitter Almonds, Southernwood, Hellebore, the Root of Briony, of white Lillies, Bean meal, the meal of the bitter Vetch Orobus, the meal of Lupines, Turpentine, Sulphur, Tartar: Unto these you may add and mingle therewith Anodynes, that is to say, those Remedies that mitigate the itching, and assuage the pain that is excited by other Medicaments; and such are these, viz. Oyl of Roses, Oyl of Dill, and Oyl of Camomile, the Fat of a Hen, Goose Fat, the Fat of a Calf, new and fresh Butter, Hogs Lard, &c. Adding likewise those things that correct and amend the distemper of the Skin; and such are these, to wit, the juyce of Sorrel, Milk, the seed of Melons: those Medicaments are likewise herewith to be mingled that are of thin parts; as Vinegar, and the juyce of Lemmons.

From al which, and other such like (as we see occasion) divers Medicaments are compounded; according to the nature, condition, and constitution (together with al other circumstances) of the body thus affected. For al kinds of *Scabies* or *Scabbiness* are not easily to be cured with one only Medicament: and whosoever they be that attempt this, they are justly to be accused either of negligence or ignorance. For the milder sort of Medicaments are most fit and proper in a mild and moderate *Scabies*, in Children, Women, tender and delicate persons; and so on the contrary: And likewise the moist *Scabies* requireth one kind of Medicaments, the dry another.

The milder and gentler sort of Remedies are these that follow: Viz.

Take Litharge first dissolved and diluted with Rose Vinegar, the Roots of white Lillies, of each two drams: Oyl of Roses two ounces: Bean meal one ounce: Juyce of Lemmons two drams: Camphire four grains: those of them that are to be pulverized, let them be beaten into a very smal and fine powder, and so mingled with the rest into the form of a Liniment. Or,

Take Juyce of fowr Sorrel, and Elecampane, of each one ounce: Juyce of Lemmons six drams; Turpentine an ounce, Litharge half an ounce, Cerus two drams, common Salt half a dram, Oyl of Roses as much as wil suffice; and make a Liniment. Or,

Take the Fat of a Hog an ounce and half: Oyl of Roses one ounce. Turpentine half an ounce: Oyl of Tartar, and the Yelks of Eggs, of each one dram: Pouder of Frankincense two drams: common Salt one scruple: and mingle them carefully. Or,

Take fresh Butter, and Turpentine, of each four ounces: Oyl of Roses, and Myrtles, of each one ounce: two Yelks of Eggs: Cerus one ounce: Salt two drams: Mingle them wel. Or,

Take the juyce of fowr Sorrel, and Elecampane, of each an ounce and half: Vinegar half an ounce: Oyl of Roses and Wax, of each a sufficient quantity: and make an Unguent. Or,

Take Turpentine washed with Rose water half an ounce: the juyce of fowr Oranges three drams: the Yelk of one Egg, Butter two drams, Oyl of Roses as much as wil suffice to make a Liniment. Or,

Take Turpentine washed in Scabious water one ounce: Oyl of Roses half an ounce: fresh Butter and Hogs Grease, of each two drams: Salt half a dram: Litharge one dram: the Yelks of two Eggs: Juyce of Lemmons six drams: Wax as much as wil serve the turn to make an Unguent. Or,

Take Juyce of fowr Sorrel one ounce: Turpentine, and Styrax liquid, of each a dram and half: Elecampane Root two drams: Frankincense one dram: the Yelk of one Egg: Salt one dram: Vinegar a dram and half: Hogs Grease and Oyl of Roses, of each half an ounce: Wax a sufficient quantity to make a soft Unguent. Or,

Take Litharge half an ounce: Cerus two drams: Mastick, and Frankincense, of each two drams: the juyce pressed forth of an Orange (the Orange being cut in pieces together with its rind) one ounce: Oyl of Roses as much as wil suffice. Stir them wel about al together in a Leaden Mortar, and so make an Unguent.

For the Rich, and such as are tender and delicate, there are wont to be made Unguents of Apples; which they therefore call *Pomata's* or *Pomada's*; as for instance, thus:

Take Cinnamon and Cloves, of each three drams: Lavender flowers two scruples, Nutmeg two drams, Styrax Calamite one dram, Benzoin five drams, Camphire one scruple, sweet smelling Apples one pound and half, Rose water the like quantity, Wine four ounces, the fat of a Hog fresh and sweet one pound: boyl al, and strain them, and then add of Musk half a scruple: and make a Liniment.

But in such as are of ful age (especially where the *Scabies* is confirmed and settled) the stronger sort of Medicaments are necessary. As for Example:

Take the Juyce of fowr Sorrel one ounce; Sulphur Citrine three drams; Nitre two drams; Liquid Styrax, and Lupine Meal, of each two drams and half; Oyl of Roses as much as will suffice;

suffice; a little Wax; and to make an Unguent.  
Or,

Take Sulphur half an ounce; Nitre one dram; Oyl of Roses, and Oyl of Nuts, of each one ounce; Juyce of Lemmons two drams: mingle them, &c.  
Or,

Take the Roots of Elecampane, fower Sorrel, of each one ounce; boyl them in Vinegar, and let them be passed through a fine sieve. Then add of live Sulphur one dram; common Salt half a dram; of the Juyce of Lemmons six drams; of the white Unguent of *Rbasir*, and of the Citrine Unguent, of each half an ounce; Oyl of Tartar, and Oyl of Roses, of each as much as wil suffice; a little Wax: Make an Unguent. Or,

Take good Wine that is sweet scented, a pint and half; Sulphur three drams; Frankincense two drams; Salt one dram and half; Hogs greafe three ounces; Wax one ounce and half; let them boyl together to the consumption of the third part; and in the end add of liquid Styrae a dram and half; Mingle them. Or,

Take Root of Pimpernel, fower Sorrel, Elecampane, of each half an ounce; let them be infused in the Water of Fumitory, and afterward let them be boyled; unto the straining strongly pressed forth add Turpentine three ounces; Oyl of Roses two ounces; let them boyl until a third part or the one half be consumed; and then add of Sulphur half an ounce; Allum two drams; Salgem, and Nitre, of each half a dram; Oyl of Eggs and Wax, of each a sufficient quantity; and make an Unguent. Or,

Take unsalted Butter four ounces; Turpentine an ounce and half; Sulphur two drams; Salt half a dram; the Yelk of one Egg; and mingle them wel together. Or,

Take Turpentine four ounces, Citrine Sulphur half an ounce; the Root of Pimpernel, Elecampane, *Lapis Calaminaris*, of each half a dram; Salgem three drams; Licharge, and Ceruss, of each one dram; the Yelks of two Eggs; Allum two drams; a little Vinegar, and Oyl of Roses as much as wil suffice, and make an Unguent.

There are some likewise that mingle Quick-silver and Sublimate with those Unguents and Liniments they make use of in this Affect. But in regard that there oftentimes thereby accreth unto the Patient much damage and danger; it is therefore the more safe and advised course (in the said *Scabies*) altogether (or as much as possibly may be) to abstain from Quick-silver and Sublimate, inasmuch as the said *Scabies* may be cured by other Medicaments.

And sometimes likewise (for the anointing of the Hands) there are provided little round Balls, Sopes, and those Washballs they commonly call *Smegmata*; as for example:

Take Powder of the Flowerdeluce Root half an ounce; of Elecampane two drams; Peculie

Brion. and Gerse Serpentariae (by both which you are to understand a Powder made by Art of the fresh Roots of Briony, and Wake-Robin or Cuckowpint, the powder of which last is called Gerse Serpentaria, and it is as white as Starch or Ceruss) of each one dram; Choice Frankincense two drams; Oyl of Tartar three drams; Liquid Styrae two drams; the meal of Lupines half a dram; the Juyce of fower Sorrel three ounces; Venice Sope dissolved in Rose water and Fumitory water, as much as wil suffice; Musk if you please half a scruple, or somewhat more; mingle all these, and make a Mass, and of it little Balls that may be wrapped about with Silk. Or,

Take the distilled Water of fower Sorrel one pint; the Juyce of Plantane two ounces; Rose water one ounce and half; Juyce of Lemmons one ounce; Licharge three ounces; Ceruss two drams; Mercury sublimate six drams; common Salt two drams; Sulphur one dram and half; Powder what is to be powdered, and then mingle them in the Waters; let them stand infusing twenty four hours, and afterwards destill them.

Another experimented Remedy, in all kinds of *Scabies* or Scabbiness.

Take Roots of fower Sorrel (while they are yet green) and of Elecampane, green likewise, of each half a pound, Swines fat three ounces; bruise the Roots wel in a Mortar, and let them boyl a little over a gentle fire; and after let them be hard pressed and squeezed, and so make hereof an Unguent.

### Of *Malum Mortuum*.

Some Physicians make mention of a peculiar kind of *Scabies*, which they call *Malum Mortuum*, because therein the body appeareth black, and as it were mortified; which is a *Scabies* with a wanness and blackness, and crusty Pustules that are black, foul, without any matter, sense, and pain, especially in the Hips and Ankles, taking its Original from Natural Melancholy when it is become adust; and thereupon it is that it followeth the use of Melancholy Meats, the obstruction of the Spleen, and the retention of the Hemorrhoids; and without doubt, it wanteth not the scorbutical malignity. And it is a Malady (as are likewise all Melancholy Affects) of a long continuance, and very hard to be cured.

But yet it is to be cured by preparing the Melancholy Humor, and purging of it in a fit and convenient manner, and by correcting the fault of the Spleen (upon which it dependeth) touching which (as in the Scurvy, so likewise elsewhere here and there) we have already often spoken. The body being evacuated, we are to continue those Medicaments that temper the Melancholy humor; unto which there are to be added those Medicaments that are good and proper against the Scurvy.

Further.



Furthermore, let the body be washed with this Bath, prepared and made of the Roots of Poly-pody, sowr Sorrel, Elecampane, Flowerdeluce, the rinds of the Elder, Danewort, Wormwood, Fumitory, Parietary, and Mallows. When the Patient goeth into the Bath, let there be given him the Conserve of Fumitory, or the Syrup or Water thereof with Treacle.

Afterward let the place affected be anointed with *Unguent Diapompholygos*, or such like.

Take *Juyce of Fumitory*, of *sowr Sorrel*, *Selandine*, *Spoonwort*, and *Water-Cresser*, of each an ounce; the fat of an old Hog three ounces; boyl them until the *Juyces* be consumed; and then add of *live Sulphur* half an ounce; Oyl of *Nuts* an ounce; *Unguent Diapompholygos* one ounce and half; *Frankincense* two drams; *Turpentine* half an ounce; mingle them wel together in a *Leaden Mortar*, and make an *Unguent*.

### Chap. 28. Of Lepra of the Greeks.

**L**epra (so called from the Greek word *Lepis*, in *Lacine Squamma*, in regard of the resemblance it hath with the scales of fishes) is a certain high, or indeed the highest degree of *Pso-ra* or *Scabies*. But now (at the very first, and before we proceed any further) lest that any one should be troubled, and made to doubt in the reading of Authors, it is to be observed that we here speak of the *Lepra* of the Grecians, and not that of the Arabians. For that Affect which the Arabians call *Lepra*, is the same with the Greeks *Elephantiasis*, touching which we shal speak in the next Chapter, which is nothing else than an universal Cancer of the whol body; as it is manifest from the description that is given it by *Avicen* in his *Tertia Quarti*, *Tetrab. 3. Chap. 1.* where he saith thus: The *Lepra* is a Disease having its original from black Choler dispersed throughout the whol body; and from whence the temperament of the parts, the form and figure, and at length also the very continuity it self is corrupted; and it is a Cancer common to the whol Body.

But now again the Arabians call the *Lepra* with the Greeks, *Albaram nigram*, or the black *Albaras*; as appeareth out of the same *Avicen*, in his *Septima Quarti*, *Tetrab. 2. Chap. 9.* The black *Albaras* (saith he) is that very same affect that we otherwise also call *Impetigo Excoriativa*; and it is a scabbiness happening unto the Skin, rough, vehement; and it maketh scales like unto fish scales, with an itching, and it is accompanied with a melancholy humor, and it is one of those things that precede and go before the *Lepra*: By al which words *Lepra* of the Greeks is manifestly described. For why? *Lepra* of the Greeks is a *Scabies* in the highest

degree, and differeth from the *Scabies* only in the vehemency of the Affect. From whence also it is that *Paulus Aegineta* in one and the same Chapter, viz. *Chap. 2.* of his fourth Book, handleth both the *Lepra* and the *Scabies*: But *Avicen* (whom I had rather follow) treateth of them in several and peculiar Chapters; to wit, of *Scabies*, in the seventh Section of his fourth Book, *Tetrab. 3. Chap. 6.* But he handleth *Lepra* of the Greeks in the place alleadged.

For in *Lepra* there is a far greater corruption of the Humors, and consequently a greater distemper than there is in *Scabies*: and in *Scabies* there fall off only certain bran-like substances; whereas in the *Lepra* that that falls off resembleth the scales of Fishes; so that from the itching, by the *Scabies*, there is an easie and ready passage unto the *Lepra*. For this itching is a certain kind of light roughness in the Skin, in the which (unless haply it be the more violently scratched) there falleth off nothing at al from the Skin. In the *Scabies*, afterward the Humor becometh more evident; and upon the scratching there fall off certain branny bodies. In the *Lepra* the swelling is greater; and there fall off no longer certain smal branny substances, but scaly bodies, whether there be any scratching or not. For in the *Scabies* the matter is more thin, and preyeth upon the highest and utmost Skin alone: but in *Lepra* the matter is more thick, and therefore doth not only feed upon the utmost superficies, but likewise upon the deeper parts of the Skin.

And without al doubt, *Celsus* in his fifth Book, and 26. Chap. under the name of *Impetigo* propoundeth and comprehendeth this *Lepra* of the Greeks, and in no wise doth he understand the Greeks *Lichen* (which by others is called *Impetigo*) when he thus writeth: But now (saith he) there are of *Impetigo* four species or kinds; of the which that is least burrsful that in likeness representeth the *Scabies*. For it looketh red, and is harder, and is also exulcerated, and corrodeeth. But it is distinguished from the said *Scabies*, because that it is more exulcerated, and hath *Pustules* like unto *Vari*; and there seem to be in it (as it were) little bubbles or wheals, out of which in process of time smal scales are resolved; and this returneth at some more certain times. A second kind there is worse than the former, almost like unto a *Papula*, i.e. *Blister* or *Wheal*, but rougher and redder than it, and having divers forms. There fall off from the utmost Skin smal scales, the corrosion is greater, its progress is swifter and broader; and at more certain and set times it likewise both beginneth and endeth; it is first named *Rubrica*. The third sort is yet worse; for it is thicker, and harder, and swelleth more; it is also cleft in the top of the Skin, and it corrodeeth more vehemently. It is also in its motions forward scaly, but black; and it creepeth as far off

off both slowly and broadly. At certain times it either ariseth or endeth; neither can it be totally taken away, it is fennamed the Black. The fourth and last sort is that which altogether refuseth to admit of any Cure, and differing in colour: for it is somewhat robitish, and like unto a new made Cicatrice or Scar, and it hath little pale Scales, and some of them are whitish, and some of them like unto a Pimple, which being taken away now and then Blood floweth forth. But otherwise its humor is somewhat white, the Skin is hard and cleft, and it proceedeth broadwaies. Now all these kinds do chiefly arise in the Feet, and Hands, and they also infest the Nails. There is not any one Medicament whatsoever more effectual then what (out of my Author Protarchus) I have already related, as appertaining to the Scabies. But Setapion bath prescribed of Nitre two pugils, and Sulphur four pugils, to be mingled together, and made up into a Mass with good store of Rosin; and this Remedy be himself likewise made use of. Thus Celsus.

Neither is there any Author either Greek or Latine that hath made or mentioned so many kinds of Lichenes: which yet are easily found in the Lepra of the Greeks; neither do we meet with any one Chapter in Celsus, wherein he treateth of Lepra; which notwithstanding although it were unto him unknown, could not possibly be so unto the most studious and knowing Hippocrates. Moreover, the Impetigo is by Celsus said to be worse then even the least and lightest Scabies; and furthermore Celsus writeth that all the kinds of Impetigo do send forth Scales; which indeed is most proper unto Lepra of the Greeks; and it is thought likewise to have received its name from Lepis, that is, a Scale; whereas on the contrary, never any hitherto hath attributed any scales whatsoever unto Lichen of the Greeks. We now proceed to the Causes.

### The Causes.

The Cause of this Malady is black Choler. For although there be also some certain of the Ancients that have asserted that Lepra likewise ariseth from salt Flegm: yet notwithstanding this is not so to be understood as if Lepra did arise and might be excited from salt Flegm alone, but that salt Flegm is sometimes mingled together with black Choler. And therefore we say, that whatsoever generateth and heapeth up black Choler, the same causeth, or at least very much advanceth the breeding and production of Lepra. All which have been already made known out of our former discourse touching the Scabies; as for instance, an unsuiting Diet, a dry temperament, the Hemorrhoids or monthly Courses suppressed, Issues stop: that had been long kept open and running and a Quartane Fever. And lastly, Contagion likewise maketh very much to the generating

of the Lepra, in like manner as it doth in Scabies. For albeit there be some that deny that the Lepra is contagious; yet notwithstanding they seem thus to do without any evident Cause. For if Scabies be contagious, then without doubt Lepra is so likewise, it being the worst Scabies; and the truth is, it is most agreeable to Reason, that the excess of the Scabies should be more contagious then the Scabies it self.

### Signs Diagnostick.

Lepra is easily known, since that it hath the very same signs with the Scabies. This one thing alone is proper and peculiar unto Lepra, viz. that it sendeth forth Scales. The Sweat is stinking, and the Malady will hardly yield and give way to Remedies. The Skin (as in the Scabies) is rough, dry and withered, there is present an itching, and there are certain substances resembling the Scales of Fishes that fall off from them that are affected with it, whether they scratch or forbear scratching.

### The Prognostick.

Now this Malady is difficult, very stubborn and contumacious. And unless it be maturely taken in hand, and dealt withall, it wil degenerate into the Leprosie or Elephantiasis; to wit, if black Choler be so heaped up together in the Body, that it now seizeth upon not only the exterior parts, but the internal also.

### The Cure.

As for the Cure hereof: Seeing that Lepra is as Scabies in the highest degree, it therefore requireth likewise the same Medicaments that the Scabies doth; only they must be made somewhat stronger. Wherefore a good and fitting Diet being ordained, the Body is to be evacuated (as hath been said) the distemper of the Liver to be corrected, and the matter that hath invaded the Skin by Digestives and cleansing Medicaments to be taken quite away. And in the first place, it will not be amiss here to provoke Sweating with the Decoction of Sarsaparilla, or Guajacum Wood. To cleanse, Galen (in his sixth Book of the making of simple Medicaments) doth especially commend a Myrepsick Suppository; which in regard that it hath a very strong astringens power, if Viregar be therewith joyned, having laid aside, and put off its astringent power and virtue, will excellently well discharge the office of Cleansing, and deeply penetrating in all affects of the Skin. Sulphur is here likewise very commodious, by reason of its absterfivive Virtue. The rest of the Remedies are specified in the precedens discourse of Scabies. And more likewise (which may very fitly be here made use of) shall be said below, in Chap. 4. where we treat of the Elephantiasis.

# Chap. 29. Of Vitiligo, or Leuce, and Alphas.

**V**Hereas in the former Chapter we told you that the *Lepra* of the Greeks is by the *Arabians* called the black *Albaras* (for the *Arabians* mention two kinds of *Albaras*, the one white, the other black) and that the white *Albaras* of the *Arabians* is the same with *Leuce* of the Greeks; and seeing that *Leuce* is a Species of *Vitiligo*; we therefore judg it fit to subjoyn *Vitiligo* unto *Lepra* of the Greeks.

The truth is, there be some that strenuously dispute, whether or no *Leuce* and *Alphas*, and the like Evils that we shal anon propound, do belong unto Diseases, or else unto Symptoms; and they scrape together (out of *Galen*) divers places, in which he seems to assert, now this, now that, now one thing, and then another. But since our purpose in this Book is to treat both of the Diseases and likewise of the Symptoms of the extrem parts; we wil not therefore scrupulously dispute hereof. Let it suffice that we give you notice of this, that if the recess from the Natural state (whether it be in the distemper, or in the Organical Constitution) be so smal that it hurteth no action, it is then no Disease, but only a symptom; and higherunto are to be referred the changed colours of the Skin. For although in our former Books we propounded the Diseases and Symptoms of the parts severally and assunder; yet notwithstanding it could not here fitly be done, in regard that sometimes the same Affect (according to the greatnels of the recess from the Natural state) is one while a Disease, and another while a Symptom only.

Now unto the word *Vitiligo* (from whence soever it be derived) there is no general Greek word to be found that answereth unto it; but incontineth under it these three Affects, *Leuce*, and both the *Alphas*, to wit, the white and black. For so *Celsus* writeth, in his fifth Book, Chap. 26. about the end thereof. *There are (saith he) three Species of Vitiligo; Alphas where the white colour is somewhat rough, and not continued; so that there seem to be as it were certain smal drops dispersed. And sometimes it creepeth broader, and with certain intermissions. Melas differeth from this colour, in regard that it is black, and like unto a shadow, other things are the same. Leuce hath somewhat like unto Alphas, but it is more white, and it descendeth deeper, and in it there are white hairs, soft and tender as wool or down feathers. All these creep, but in some faster, in others more slowly. But Galen (as we have already said) hath no common name under which to comprehend Leuce, and Alphas, but he propoundeth them as divers Affects; in his*

second Book of the Causes of Symptoms and the second Chapter.

Among the *Arabians* we meet with the word *Albaras*, which they divide into white and black not as one and the same Disease into its Species, but as a word into its significations. For different Affects they are, and *Albaras nigra* or the black *Albaras* is nothing else than *Lepra* of the Greeks, and the *Impetigo* of *Celsus*. But *Alba* or the white, the Greeks term *Leuce*; which appellation *Celsus* doth both keep, and maketh it a Species of *Vitiligo*. Like as *Pliny* also maketh mention of the white *Vitiligo*, in his Book 18. and Chap. 15. and in his Book 31. Chap. 10. But of *Nigra* or the black, in his Book 22. and Chap. 25. For there is no word or name to be found among the Latines that may answer unto the Species of *Vitiligo*, to wit, *Leuce* and *Alphas*.

To wit, *Phyicians* do thus stile *Leuce*, (as *Galen* writeth in his third Book of the Causes of Symptoms, and Chap. 2.) from the Colour imposing the name thereon. For look what kind of flesh Locusts have, and so likewise almost all kind of Oysters, the like hereunto have they also that have their Skins fouled and defiled with *Leuce*. But *Alphi* are so called from the Greek word signifying to change, to wit, because the colour of the Skin is changed; and yet notwithstanding not of the whole Skin, but up and down here and there great spots arise throughout the Skin; and for the most part in the Body also. And the truth is, their generation (as *Galen* there tells us) is of the like kind, to wit, from a vicious nutriment. Yet notwithstanding under these the whol flesh is not vitiated; but only in the very superficies and top of the Skin there are as it were certain little scales fastened thereupon: and the truth is, that *Alphi* or the white arise from a stigmatick, but the black from a melancholly Juice. And yet they are not true and right scales, but there is a certain kind of roughness perceived in the Skin, together with the change of colour. For in this the black *Alphas* differeth from the *Lepra* or the black *Albaras* of the *Arabians*, that in *Albaras Nigra* or the black *Albaras* there are both excoriation and scales, whereas in the black *Alphas* there are neither.

## Morphea.

*Alphas* is likewise called *Morphea*, without all doubt from *Morphe*, to wit, because the colour of the Skin is changed into white and black. *Celsus* hath used the Appellations of the Greeks, in distinguishing the severall species of *Vitiligo*; and he hath named the first Species *Leuce*, or *Leuca*: but *Alphas* be callet by the single name *Alphas*; and the black he stileth *Melas*.

But now this change of colour (as wel in *Leuca* as in *Alphas*) doth not only consist in the Skin, but is extended likewise unto the Hairs; and as *Celsus* in the place alleadged writeth, in *Leuca* there are white Hairs, such as are like unto the



soft and tender Hair in new born Children; and the white *Alphi* likewise (as *Paulus Aegineta* tells us in his fourth Book, and Chap. 6.) produce white Hairs, and the black *Alphi* black Hairs. And *Johannes Philippus Ingrassias* (in his first Tract of Tumors, Chap. 1. P. 142.) assureth us, that he had more then once seen even old Gray-headed Men that have had some part either of their Beards, or of their Eye-brows black, like as it is in young Persons that are altogether black, to wit, when *Melas* is become inveterate, or that there be present the black *Alphus*; and yet notwithstanding all this while the part affected with the *Leuca* or the inveterate *Alphus*, hath continued white.

From what hath hitherto been said it is apparent and manifest, that by reason of the color there is truly an alliance and neer relation between these two Affects, *Leuca* and *Alphus*; and yet notwithstanding in other respects they much differ the one from the other, since that in *Leuce* there is a change not only in the color of the Skin, but of the flesh likewise, yea also a change in the very substance; whereas in *Alphus* only the Skin, or rather indeed the Scarf-skin, is changed in color.

### The Causes.

For touching the generation of *Leuca*, *Galen* in his third Book of the Causes of Symptoms, and Chap. 2. thus writeth: *When the flesh (saith he) hath for some long time been nourished with blood both flegmatick, and withal glutinous and clammy, the flesh indeed as yet remaineth, but yet notwithstanding its form is changed, and turned into another species; and it becometh in a certain mean betwixt flesh that hath blood, and that that is altogether bloodless. But when it is become such it then so befalleth it that for the nutriment that is brought unto it from the rest of the body, it doth no more so much as attempt the converting thereof into the red species of flesh, but rather into the likeness of the flesh of Locusts. And so it cometh to pass, that very speedily it is rendered and becometh both white and flegmatick, and that not only in part, but wholly; in regard that it cannot convert the nutriment into a redness, and because that withal that flegmatick humor continually floweth thereunto. And therefore what kind of flesh (even from the beginning) the Locusts have, (and almost all kind of Oysters) the like (from this transmutation) have they that are defiled and fouled with *Leuca*. For so they call this vice of the flesh, imposing, to wit, the name from the white color, like as they give the name unto black and callous flesh from the Elephant.*

But as touching the generating of the *Alphi*, *Galen* immediately subjoyneth, that the generation of them (together with the vices aforesaid) are of the like kind, but yet so notwithstanding

that under them the whole flesh is not vitiated, but only in the superficies of the body there are as it were certain scales fixed and fastened.

But now *Alphus* is twofold; the white that proceedeth from flegm, and by the Arabians is called the white *Morphea*; and the black that is generated from a melancholy humor, and is called the black *Morphea*. But yet notwithstanding some there are that constitute other colors also; and they say that the Skin is sometimes changed unto a citrine yellowish color, and sometimes likewise unto a red, according unto the diversity of the corrupt humor. And indeed what they say is not altogether frivolous and to no purpose: for the Skin (true it is) is changed oftentimes, not only unto a white color, or a black color alone; but also very frequently unto a citrine and yellowish color.

The Antecedent causes of these Vices are Humors of the same kind heaped up in the Veins, and by Nature driven forth unto the circumference and superficies of the Body. But now those humors proceed from a default and error in the sanguification; which happeneth either by reason of an ill course of Diet, or else from some sickness and distemper of the Liver. And yet notwithstanding unto the black *Alphus* there concurrerh likewise (and that more especially) the vice and distemper of the Spleen. But now with this malady men are more usually surprized and set upon than women. For in women those vicious humors are wont to be evacuated together with the monthly or menstrual purgation. Children are likewise less infested with this malady, in regard that their bodies are hot and moist, and therefore the less apt to breed these kind of Humors; their bodies are likewise open and permeable, and consequently most fit for insensible transpiration.

### Signs Diagnostick.

Those Diagnostick Vices are known by the change of the color of the Skin. And indeed the signs of the black *Alphus* are manifest, in regard that there are broad blackish spots (scaly as it were) here and there spread, and dispersed up and down throughout the Skin. But because in *Leuce* and the white *Alphus* there is every where, and on all sides, a white color, these two vices are therefore to be distinguished. In the white *Alphus* the hairs in the place affected retain their natural color; but in *Leuce* there arise white hairs, like unto the soft and tender woolly hairs in young Children. And likewise in *Leuce* the Skin is more depressed. Moreover in the *Alphi*, if the Skin be pricked with a Needle, there issueth forth blood; but in *Leuce* that which floweth forth is not altogether blood, but a certain waterish and white humor. And lastly, in the *Alphus* the spots are not continued, but disjoyned; but in *Leuce* they are altogether continued,

nued, by reason of the equal vice of the Skin underneath, and the flesh.

### Prognosticks.

1. The *Vitiligo* (to tel you the truth) hath in it no danger of death; and yet notwithstanding it is a very filthy and loathsome affect.

2. If it be cherished by any default of the Liver or the Spleen, the Malady is then the harder to be cured.

3. *Leuce* is more difficult to be cured than *Alphus*; and the *Alphus* likewise that hath been of long continuance is more easily cured than *Leuce* that is but newly beginning.

4. That *Leuce* which waxeth not red when it is rubbed, and being pricked doth not bleed, is incurable.

5. That *Leuce* likewise is incurable which seizeth upon, and possesseth a large and spacious room, is of long continuance, and groweth and encreaseth every hour; and also, when all the Aliment that floweth thereunto is corrupted.

6. On the contrary, that *Leuce* that hath yet some kind of redness left in it, and is but smal, is curable.

7. That *Leuce* that is in the hand, or the foot, is of difficult Cure.

8. The white *Alphus* is likewise more easily cured than the black. And in the general, look by how much the color recedes from the Natural color of the body, by so much the more is the Malady the harder to be cured.

### The Cure.

This Malady is cured if the Humor that excite it be wasted and consumed; and if a course be taken to hinder the further afflux of the like humor unto the skin; and this is done if care be taken that the humor that is already present in the body may be evacuated; and such a course likewise taken, that may prevent the generating of any new humor for the future.

In *Leuce* and the white *Alphus* there is no need at all of Venesection. For the blood doth not here superabound, but that which too much aboundeth, is the thick and cold humors: which are to be prepared by those Medicaments that bear, cur, and cleanse; and such as these are made and provided of Hyssop, Betony, the opening Root, Stoechas, and others of this kind: and they are afterwards to be evacuated by those Medicaments that purge forth flegm; such as are Agarrick, Mechoacan, Turbith, Colocynthis, and the like. Avicenn maketh use likewise of Vomitorics, and Diureticks, that is, those Medicaments that cause and provoke Urine. And then in the close and conclusion we are to administer Treacle, to consume and waste the cold crude humors.

Before Topicks may be applied in *Leuce* the

place is first of all to be well rubbed with course rough cloaths, that so the Medicaments may the better penetrate. Let the Topicks be so ordained and appointed, that they may cleanse, discuss, and draw the blood unto the affected part; such as are those that make red the place, which are very fit and proper in *Alphus*; but those that are stronger, and blisterers, and as it were Causticks, are required in *Leuce*.

Those Medicaments that cleanse, are, Lupines, the seed of the bitter Vetch Orobus, Gentian Root, Beans, Figs, bitter Almonds, the Alphodel or Daffadil Root, Alyssum or Madwort, Nightshade, Sulphur, Pellitory, wild Cucumber Root, and Briony Root.

Those things that attract and draw the blood, rubefie or make red the part, and that likewise excite and raise Blisters, are, Mustard seed, the Herb Rocket seed, Thlaspy or Treacle Mustard seed, Nitre, Euphorbium, Cantharides, the Root of Water Dragon, and other such like, that we have elsewhere mentioned and explained.

From these there are divers Compositions to be made and formed. As,

Take Root of the sower Sorrel, wild Cucumber, of each one ounce; the greater Celandine, and Fumitory, of each one handfull; boyl them in Water, and a third part of Vinegar; and then let the place be washed with the Decoction; and afterward anointed all over with this Unguent, Viz.

Take the Juice of the greater Celandine, sower Sorrel, Fumitory, and Scabious, of each one ounce and half; Mustard seed one ounce; the fat of a Hen as much as will suffice, and make an Unguent.

Vesicatories or Blisterers, either of Mustard, or of the Flyes Cantharides, or such like, in *Alphus*, are to be held and kept at least so long in the part affected, until there be sensibly perceived a certain kind of stinging and biting; but in *Leuce*, so long until that the Scarf-skin be parted asunder, and that Blisters be excited and raised.

In the black *Alphus* let the place (the Patient being in a bath) be anointed over with the Powder of Mustard seed mingled with Water, and made up into the form of a Pultis; and let it be so long there detained until there be felt and perceived a certain mordication or biting: or else let the Powder of Mustard seed mingled with Sope be somewhat dissolved in Water, and so spread and anointed upon the part. Or,

Take White Sope one pound; slice it, and let it be so dried, that it may be reduced and made into a Powder. Then add thereto Bean-flour, the meal or flour of Lupines, of each three ounces; Mustard seed one ounce; the Crumb of white Bread one ounce and half; let them be mingled well together with the Juice of sower Sorrel.

But in the first place, it is mainly requisite that the Patient be careful in his Diet; that so the fault

of the blood may be corrected and amended. He must for this purpose feed upon meats that afford a good juyce; and he ought carefully to abstain from all sorts of salt meats, meats that are smoak-dried, and meats that are acid, thick, viscous or clammy. The place affected is dayly every morning to be welchased and rubbed, either with a rough course Linen cloth, or else with the hands, being first al over wet with the Oyl of bitter Almonds.

### Chap. 30. of the Tumors, Impetigo, and Lichen.

**W**E have already told you above in the 28. Chapter, That *Celsus* his *Impetigo* is nothing else but the *Lepra* of the Greeks. But now the *Impetigo* of *Pliny*, and that we likewise meet with in divers others of the Latins (and of which it is our purpose here in this Chapter to treat) is the same that the Greeks cal *Lichen*.

Unto these *Lichens* there likewise *Mentagra* belongeth that that *Pliny* calleth *Mentagra*; touching which he thus writeth in his 26. Book, and Chap. 1. Even the very face of men (saith he) is now sensible of Diseases that are altogether new, and in al former ages unknown, not only in Italy, but likewise throughout almost all Europe. Neither is it in all parts of Italy that these Diseases run up and down, neither throughout Illyria, or France, or Spain, as here at Rome, and the parts adjacent, where they most especially prevail and spread themselves; being (the truth is) altogether void of pain, and having in them no danger at all of death; but then they are so foul and filthy, and they so defile the face that any kind of death is to be preferred before this impure Affekt. The worst and most grievous sort of these they cal *Lichenes* by their Greek name; but in Latine (in regard that the said Affekt arose especially from the Chin) they first of all only in a jesting and sporting manner (as too many there are that are Naturally apt and forward to make themselves merry with the miseries of others) but soon after they commonly (and as by a generally received name) cal it *Mentagra*, because of its rise, as I said before, principally from the Chin) seizing upon, and in many places overspreading as it were the whol Countenance, the eyes alone being free, and thence descending both into the Neck, the Breast, and the Hand, together with a filthy kind of bran that it causeth unto the Skin. This Plague (if I may so cal it) was altogether unknown unto our Ancestors, and our Fathers before us were never sensible thereof. And it first of all crept into Italy about the middle of the Reign of *Tiberius Claudius Caesar*, one *Persianus* a Knight of Rome, and being then *Quæstor*, having been in Asia, and thence bringing along

with him the contagion thereof. Neither were the Women only sensible of this Malady, or the Bond-slaves, or the mean *Plebeians*, or the middle rank of *Citizens*; but even the Nobles themselves caught it by the swift and secret conveyance of a Kiss; and in many of them (those especially that had submitted themselves unto the Cure that was then practised) the *Cicatrice* was more foul, deformed, and unsightly than the Disease it self. For they were cured by *Causticks*; that so the body might not be burnt even to the very bone, where the Malady proved rebellious and refractory. And out of Egypt, from whence it first sprang, there came hither unto us such Physicians as undertook the curing of such Diseases; and the pains they took in the Curing of this one only Malady was very advantageous and gainful unto them. For certain it is, that *Manilius Torquatus*, one of the *Prætorian Order*, when he was sent *Embassador* into the Province of *Aquitain*, gave two hundred *Sesterces* for his being cured of this same Disease. Thus *Pliny*.

There are some indeed that reprehend and blame *Pliny*, and that assert that many yeers likewise before the Reign of *Claudius Caesar* these *Lichenes* were wel known unto the Grecians; because that *Hippocrates* in the third of his *Aphorisms*, *Aphor. 20.* and in his second Book of *Womens Diseases*, maketh mention of *Lichenes*; and that it is probable that the Malady vexed Italy in like manner; forasmuch as *Galen* also in his fifth Book of the Composition of Medicaments according to the places, Chap. 7. maketh mention of these *Lichenes* in the Chin; and yet notwithstanding he hath not one word of their rise and beginning under the aforesaid *Claudius*; and the truth is, that most of those Authors out of which he citeth the Medicinal Remedies against this same Disease, lived before *Claudius Caesar*. But for this we must here know and take notice, that the *Lichen* is twofold; the one is that which *Hippocrates* & the other Greek Physicians before the time of *Claudius* the Emperor make mention of; and which *Pliny* (with al other the Latines, *Celsus* alone excepted) calleth *Impetigo*; the other that which was before the time of *Claudius*, and altogether unknown, the which others cal *Lichen agria* & *fera*, or the wild *Lichen*; but most of them have named it *Mentagra*. And this distinction *Pliny* seemeth likewise to have observed, in his Book 20. Chap. 1. and 9. and Book 22. Chap. 25. and Book 23. Chap. 7. and elsewhere; and to have called these *Lichenes* of the Ancient Greeks *Impetigo*; but this new kind he calleth only by the single and bare name *Lichenes*, to wit, that so he might not (with the vulgar) make use of the word *Mentagra*, being the name that was at the first jestingly and corruptly imposed upon it. And that this latter sort of *Lichenes* was held to be contagious and Epidemical, *Galen* seemeth sufficiently to hint this unto us, when he writeth, and assureth



assureth us in his fifth Book of the Composition of Medicaments according to the places, Chap. 7. That one *Pamphilus* by the curing of the *Lichenes* got good store of Wealth at Rome, when the Disease *Mentagra* (as the vulgar call it) raged and prevailed here in the City. Both kinds of the Disease *Celsus* in his fifth Book, and Chap. 28. seems to comprehend under the name of *Papule*, when he thus writeth: *There are* (saith he) *of Papulæ two sorts; the one whereof is, in which the Skin is exasperated by the smallest Pustules, and becometh red, and is gently and lightly corroded; having the middle part of it a little smoother, and creeping along but very slowly: and this same Malady most usually beginneth in a round manner; and for the same reason it proceedeth and creepeth along after the same round manner and fashion. But now the other is that which the Greeks call Agria, that is, Fera, or wild. In the which indeed the Skin is likewise but far more exasperated and exulcerated, and is more vehemently corroded and gnawed, and thereupon becometh red. And sometimes it also sendeth forth Hairs. Thus far Celsus: All which agreeeth very well with that which Galen assereth in his fifth Book of the composition of Medicaments according to the places, Chap. 7. as likewise Paulus Aegineta in his fourth Book, Chap. 3. and Aetius writeth in even very same (where he treateth of Lichenes) Tetrab. 2. Sermon. 4. Chap. 16.*

what Lichen is. But now Lichen or Impetigo (that we may give you the general description thereof) is a roughness of the Skin with dry Pustules, and with an extreame itching; creeping forward unto the neer adjacent parts, and in a short space much extending it self.

### The Causes.

The Cause is a serous or wheyish, thin, and sharp Juice, mixed together with a thicker humor. Now this humor is generated either from a bad and corrupt kind of Diet, and salt and sharp meats; or else also from the heat of the ambient Air; which being afterwards thrust forth unto the Superficies of the Body, it there exasperateth the same, and as it were superficially exulcerateth it. And this happeneth more especially in the springtime; whereupon it is, that Hippocrates (in the third Book of his Aphorisms, Aphor. 20.) reckoneth up Lichenes among the Diseases of the Spring. It likewise now and then happeneth in the Winter time, if by the Air the Pores of the Skin chance to be close shut up, and that sharp and salt humors be therein detained. And yet notwithstanding this Malady may likewise proceed and be contracted from Contagion, or Infection.

### The Differences.

Now there is a twofold sort of Impetigo (as we told you before out of Celsus) the one whereof

is more mild and gentle, in the which the Skin is less and by the least sort of Pustules exasperated; and it hath its middle part somewhat more smooth; and it creepeth forward but very slowly. The other that which the Greeks call *Agria*, the Latines *Fera*, or wild; in the which the Skin is more exasperated and exulcerated;

### Signs Diagnostick.

The Impetigo is known by this, that the Skin is made hard, dry, rough, and as it were full of scales: there is likewise present an itching, and the Malady groweth broader from day to day; and from a very small and inconsiderable beginning it diffuseth it self unto an extraordinary great breadth.

### The Prognosticks.

1. This Affect is not in the least dangerous; and that which is newly begun, and mild, is very easily cured.

2. But that Impetigo that is called *Agria*, or the wild Impetigo, and that which ariseth from a worse kind of humor, is not to be cured but with much more difficulty; and it may soon pass and turn into the *Lepra* or *Leptosie*.

### The Cure.

Such a kind of Diet ought to be ordained, that will not heap and treasure up such like vitious humors, to wit, those that are salt, and sharp.

Moreover if there be any signs, that many of these kind of vitious humors do abound in the body, they are then by convenient Medicaments to be altered, and evacuated.

As for Topicks; the Spittle of one that is fasting (if the part affected be therewith anoynted) healeth and helpeth a mild and Recent or new begun Impetigo; and so likewise doth that liquor or moysture that sweareth forth of green Wood while it is burning; as also the Leaves of Wall-Pellitory, or the Root of four Sorrel bruised with Vinegar: as also the Gum of Prunes, if the part be anoynted therewith; that which is here of singular use and benefit, is, the Oyl of Eggs, and the Oyl of Tartar by draining; especially if mingled together with other fit and proper Remedies. Or,

Take Oyl of Roses one ounce, Turpentine washed in Rose Water, three ounces; Oyl of the Yelks of Eggs six drams, and Oyl of Tartar by draining two drams; and mingle them. Or,

Take Unguent Diapompholyx, one ounce; the White Unguent of Camphire half an ounce; Oyl of Tartar by draining two drams; Mingle &c. Or,

Take Oyl of Wax one ounce, Oyl of Eggs three drams, and of Tartar by draining two drams; Mingle, &c. Or,

Take

Take Frankincense, Ammoniacum, of each half an ounce, Oyl of Yelks of Eggs two ounces, Wax half an ounce; Mingle them, &c. Or,

Take live Sulphur one ounce, Frankincense and Myrrh of each two drams, Camphyre one dram: bruise them into a very smal and fine powder, and add of Borax one scruple, Rose Water a Quart; and destil them. Or,

Take the Flour of Cicers one ounce, Alum half an ounce, Honey as much as wil suffice, make an Unguent. Or,

Take the Raddish roor, make it hollow by raking forth as much of the pith as you please; and then fill it up with Salt, Mustard, and Wine, let them stand for the space of one whole night; and then anoynt the *Lichenes* with the Liquor. Or,

Take Chalk beaten to a powder, and let it be mingled with the Juyce of Sengreen in the manner of a Liniment, with which let the place affected be anoynted.

But if the *Impetigo* be fierce, contumacious, and of a long continuance, then there will be need of such Remedies as do cleanse more forcibly. And here we must commend unto you (as that which is very efficacious) that liquor that is destilled out of the Oyl of Tartar *per deliquium* or by draining, and Quick-silver; as for example,

Take Oyl of Tartar by draining half a pound, Quick-silver two ounces, destil them by a Retort. The Quick-silver wil first come forth; and after it a Water that is excellent against all contumacious and stubborn *Lichenes*. Or,

Take Turpentine washed in Rose Water one ounce, Oyl of Roses half an ounce, Swines Fat three drams, live Sulphur two drams, Nitre a dram and half, Alum, Sugar, Salt, of each one dram, Seed of Stavesacre, Licharge, of each one scruple; Yelks of two Eggs, Wax as much as wil suffice, and make an Unguent. Or,

Take the Flour of Darnel one ounce, Stavesacre seed two drams, the Spume or froth of Silver six drams, Ceruss two drams, burnt Lead, and Antimony, of each a dram and half, Swines Fat one ounce, the Juyce of Scabious and of Lemmons, of each six drams; Quick-silver extinguishd or kil'd with Hogs Grease half an ounce, Oyl of the Yelks of Eggs, and Oyl of Tartar by draining, or (as it is usually prescribed) *per deliquium*, of each two ounces; Mingle and make a Liniment. Or,

Take the Leaves of Willows, of Mallows, of the Bur, or the Ivy Leaves, of each one handful; boyl them in red Wine. Let the place be washed with the Decoction; and after the washing, let the leaf of the Bur be laid thereon.

This following Unguent is likewise commended by *Valescus* and *Guido*; *Viz.*

Take the Seed of Juniper shakn wel together, one ounce, boyl them, and to the straining add of Hogs Grease six ounces, Turpentine one ounce;

dissolve all over the Fire. When they are removed from the Fire, and cooled, let the warry part be poured off from them, and then let the remainder be diligently stirred about in a Mortar, adding thereto of live Sulphur one ounce, and so make an Unguent.

But if so be that the Malady wil not yield, nor be removed by these Medicaments, but that the part become Callous, we must then make use of Excoriatives, such as *Pamphilus* heretofore used at Rome; touching which, and other the like Remedies against the *Impetigo*, we are to consult *Galen*, in his fifth Book of the Composit. of Medicaments according to the places, Chap. 7. and *Aetius*, Tetrab. 2. Serm. 4. Chap. 16.

### Chap. 31. Of Gutta Rosacea.

A Tumor neerly allied to this *Impetigo* is that which the more modern stile *Gutta Rosacea*, and others *Gutta Rosea*; the *Arabians* *Albedsamen*, or *Alquafen*, and others likewise *Albutiqaga*, which is a spotted redness, or rather a redness with Tubercles, with which the Cheeks, the Nose, and the Face is defiled and polluted, as if it were all to be sprinkled with Rosie drops. And sometimes these Tubercles get a growth and increase, in so much that the Face becometh unequal, and frightful to look upon, and the Nose augmented unto an extraordinary bigness, and deformity. There lived a yeer or two ago (not far from *Dresda*) a man affected with this Malady, whose Nose grew to such a vast greatness, that it hinderd him in his reading; which Malady brought him to that pass, that in the yeer 1629. he was content to have some certain parts and small parcels of his Nose pared away and quite cut off.

*Nicholaus Florentinus* Serm. 7. Tetrab. 6. Summ. 2. Chap. 15. maketh three Differences of this Malady. For there is sometimes present (saith he) a preternatural redness without any Pustules, Bladders, or Ulcers; and this we call absolutely a red Face; and sometimes this redness is accompanied with Pustules, or Bladders, and then it is called a Pustulous or Bladdery redness; and sometimes it hath attending it an Ulcer; and then we call it an Ulcerous redness. And this last Difference seemeth very little to differ from that Affect that we call *Noli me tangere*; which they thus describe, to wit, that it ariseth in the Face, and especially above the Chin, neer about the Mouth, and the Nose; and they conceive that it is so called, in regard that (even by those Remedies that seem most fit and congruous) it is rather irritated then any waies mitigated, and notwithstanding all the means that are used, it is more and more carried on by eating and consuming the sound parts. And hereupon it is likewise, that in one and the same Chapter they treat both of *Gutta Rosacea*, and the *Noli me tangere*.

*tangere.* There is notwithstanding another Affect which they likewise vulgarly call *Noli me tangere*, touching which we have already spoken above in the 20. Chapter.

### The Causes.

The Cause of this Affect is acknowledged to be a hot blood; and the same is likewise thick and gross, and generated through some default in the Liver, that produceth such like blood; the which being carried especially unto the face (as otherwise we see, even in blushing, the blood is easily and soon carried thither, and there diffused) whenas by reason of its thickness it can neither retire back again, nor yet be dissolved and scattered, it there sticketh fast in that place; and first of all it causeth a red color of the Face, and soon after likewise (if the said Malady continue long) it generateth red Pustules. Now this distemper happeneth unto some through a default and something amiss in their Natural Constitution; and these let them live never so soberly and temperately, yet notwithstanding they are nevertheless subject and liable unto this Affect. But however for the most part this evil is contracted and procured by such persons as are addicted to the pot, and given over to drunkenness and swilling; and they are not only those that are excessive drinkers of Wine, but likewise such as exceed in drinking of Beer: and I once knew a Student that was notoriously affected with this Malady, and he had gotten a most foul and deformed Face. This man travelling afterwards into Italy and France (where there is not that plenty of Beer) at his return home again was much the better, and far less afflicted with the aforesaid Malady than formerly he had been. For Beer is much thicker than Wine, and therefore it also breedeth and supplieth a more thick and gross blood.

### The Prognostick.

This Malady is very hardly cured, and especially if the Face be full of Pustules, and as it were exulcerated; and for the most part it accompanieth the person that hath it so long as he liveth.

### The Cure.

Now this Affect is not any other way to be cured, but by taking away the fault of the blood, and what is amiss in the Liver. For albeit that the containing cause (as we call it) of this Malady may be dissipated in the Face; yet notwithstanding it will not be long ere there be made a new and fresh supply of the same matter. And therefore there must not only be an evacuation of the blood and the cholerick humor (which for the most part is mingled together with the blood) and Cupping-glasses with scarification oftentimes fastened and affixed unto the Shoulder-blades; but especially and in the first place; the extreme heat of the

blood and liver is to be brought unto a due and fit temper, and the obstructions of the Liver are to be opened; touching which we have sufficiently spoken before, in the third Book of our Practice, Part 6. Sect. 1. Chap. 1. touching the hot distemper of the Liver, and there likewise, Chap. 2. of the obstruction of the Liver. Those Medicaments that are made and provided of Strawberries, Cichory, and whatsoever Compositions that have in them any of the said Cichory, are here most useful and proper.

As for Topical Remedies, let them be cooling, when the Face is only red, and not yet defiled with Pustules; but if with the redness there be also Pustules accompanying it, then the Medicaments ought likewise to be such as have in them a power and vertue to discuss.

Now these Remedies are administered in the form of Waters and Liquors, as also of Liniments and Unguents. As first thus:

Take the Root of Solomons Seal three ounces; Flowers of Elder; of the Valley Lilly, of the bitter Mushrooms, of each six ounces; white Tartar an ounce and half; white Wine a pottle; Camphire two drams. Let them stand infusing in the Wine ten daies, and afterward destil them.

Take Wheaten Meal as much as you think fit; Goats Milk one quart; make hereof Dough, and making it into Loaves bake them in the Oven; and let this Bread be again macerated in Goats Milk for the space of twelve hours. After this add the Whites of twenty Eggs, Camphyte one ounce; burnt Allum two ounces; Destil them, and make a Water. Or,

Take Strawberries a pint, Goats Milk a quart, the Whites of twenty Eggs, the Seed of Quinces two ounces, Camphyre two drams, Allum and Sulphur, of each half an ounce; mingle and destil them.

*Lac Virginis* (as they call it) is likewise very good for this purpose, made of one part of Litharge, and three of Vinegar. But this following is more efficacious:

Take Litharge half an ounce; Vinegar four ounces; let them boyl to the consumption of the third part; and in another Pot boyl of Salt and Allum, of each half a dram; Frankincense one scruple; Rose water half a pint: Mingle both these Liquors, and pass them through a Linnen strainer; and keep it for your use. Or,

Take Sulphur two drams; common Salt, and Camphyre, of each half a dram; Ceruss, and Litharge of Silver, of each two drams; make them into a Powder, and then mingle them carefully with the Water of Bean flowers, Rose water, white Lilly Water, the Water of Solomons Seal, of each two ounces: Mingle them, &c. Or,

Take Camphyre one dram; pour unto it into the Mortar by a little at once, and stirring it well about,



about, of the Oyl of sweet Almonds three drams; afterward pour thereunto of the Oyl of Tartar by draining two drams; and then moreover add of the Yelks of two Eggs, and mingle them wel together. After this add of *Saccharum Saturni* or Sugar of Saturn, half a dram; mingle them with al possible care, and then at the length pour in unto al the aforesaid (by a little at once) the Water of Bean flowers, of white Lillies, and of Strawberries, of each two ounces; and so mingle them al wel together. Or,

Take Licharge one ounce; Allum three drams; Cerus half an ounce; Vinegar two ounces; the Water of Roses, and Plantane, of each four ounces; boyl them until a third part be wasted away, then strain them; and to the straining add a little of the Juyce of Lemmons; and with this mixture let the Face be anointed in the Evening. Or,

Take the Kernels of Peaches clean peeled, bitter Almonds blanched, of each in number six; beat them wel in a Mortar with a little milk; and then let their milky Juyce be pressed forth; unto which add of burnt Allum as much as a Nut. Afterward take of Quick-silver as much as a great Pease in quantity; which together with Spittle shake wel, and stir it about in the Mortar until it become black, and be as it were mortified; and then mingle it carefully with the former Liquor, with which about bed-time let the Face be anointed; and then in the morning following let it be washed with Rose water, or the Water of Bean flour. Or,

Take the whirest Tarrar, Allum, and Nitre, of each four parts; Sulphur one part; bruise them wel, and then Calcine them; and in a Cellar from them make an Oyl *per deliquium* (as they speak) or by draining. Or,

Take Kernels of Peaches hulled four ounces; the seed of Gourds peeled two ounces; let them be bruised, and then the Oyl pressed out of them; with which let the Face be wel anointed both morning and evening, and afterward washed with Rose water, and Bean flour Water, and the Water of Solomons Seal. Or,

Take Camphyre, Licharge, burnt Allum, of each half a dram; live Sulphur a dram and half; White Vitriol, and Frankincense, of each one dram; let them be powdered, and carefully mingled with Rose water, and Bean flour Water. Or,

Take Live Sulphur one ounce; Choice Frankincense three drams; Myrrh two drams; Camphire one dram; Cerus half a dram; Pouder them al very smal, and pour thereto of Rose water one pint, mingle them; and when the Patient goes into his Bed let his Face be anointed with the said Liquor; and the morning following let it be washed with the water of the infusion of Bran. Or,

Take Oyl of Tartar one dram; Sulphur two drams; Camphire half a dram; Cerus and Li-

charge, of each half an ounce; Rose water as much as wil suffice; and so let them stand in the Sun in a Glas close stopped. Or,

Take one whol Egg, and put it into the strongest Vinegar for four daies, until the shell be softened; afterward take forth the white, and fill it up with Frankincense, Mastick, and Cerus, of each one dram; mingle them, &c.

### Chap. 32. Of *Crusta Lactea*, *Achores*, *Favi*, *Tinea*, *Ficus*, *Helcydrium*, *Psyracia*, and *Phtiriasis*.

Of the Humors mingled together there are likewise generated both Tumors and Ulcers in Infants, that seize especially upon their Heads; touching which we have already treated in the fourth Book of our Practice, Part 2. Chap. 3, 4, 5. where we handled the Diseases of Infants, and therefore I conceive it altogether needless here to repeat any thing of what was there at large delivered. I shal only therefore here further acquaint you with these few things following. The first whereof is this, That these Affects here propounded, as likewise those which we have next of al explained, are indeed by the most referred unto Tumors; and yet notwithstanding (because there is here an Ulcer evermore conjoynd with these Affects, and the truth being that the Ulcer seemeth rather to have in it the Nature of a Disease, than the Tumor hath, which is indeed but very smal and inconsiderable) we judge that they may alike fitly and properly be referred unto Ulcers. But yet however our purpose is to continue the same Method (and as I may so say, to spin the same thrid) that we find begun by most Authors, and according to their guidance and direction. And moreover, as for what concerneth the Affects here propounded, what we are to understand by *Crusta Lactea*, and what we mean by *Achores*, *Favi*, and *Tinea*, we have already told you in the place before alleadged: as for *Helcydria*, *Psyracia*, and other the like Affects of the Head (comprehended under the general name *Exanthemata*) they are al together handled by Galen in his first Book of the Composition of Medicaments, according to the places affected, and the last Chap. but by the rest of the Greeks in divers and distinct Chapters. *Halyabban* seems to comprehend them al under the name of *Tinea*, whereas in the eighth Book of his Theory, and Chap. 18. he thus writeth: *But these Ulcers Tinea (saith he) are very smal, and they bappen unto the Head; and there is in them a bladder that hath many species and kinds. The first whereof is that we cal Favosa, which hath its original from a salt flegm: the sign whereof is this, That there is an Ulcer whereby the Skin of the Head is perforated, and ful of little boles,*

in the which there is a certain moisture like unto an Honey-comb. The second is that we call Ficosa, being round and hard; in the upper parts of which there is a certain redness, and in the concavity thereof something like unto the small grains and seeds that are in Figs. There is likewise a third species that is called Ameda: and they are Ulcers with the which there are in the Head many little holes that are somewhat less than those that are in the Favola; and out of these there issueth forth a certain humidity like unto the water of flesh. There is also a fourth sort of Pustule; but they are small and red ones; the figure and form whereof is like unto the Teats of Dugs; from which there floweth out a moisture like unto the wateriness of the blood. There is likewise a fifth species thereof, that is dry, and of a white color, like unto the Lupina; from which there floweth forth as it were hulls, and white scales. Where he constituteth four moist species of Tinea, and the fifth species dry; and under the moist he comprehendeth not only Achores and Favi, but likewise even Papulae and Ficus. But now by Papulae we are to understand all small Pustules out of which there issueth forth an humidity like unto waterish blood; so called from their figure, by which they resemble the Teats of the Breasts. They are called likewise Elcydria: For although this name (in the general) signifieth any little Ulcer; yet notwithstanding Galen in his first Book of the Composition of Medicaments according to the places, and last Chapter, attributeth this name in special unto the Ulcerous Pustules in the Head. And indeed Alexander (in his first Book, and Chap. 7.) yet more especially ascribeth this name unto the said Papulae; and so doth Paulus Aegineta in his third Book, and Chap. 3. And Aetius, Tetrab. 2. Serm. 2. Chap. 70. And Celsus likewise under the name of a little Ulcer, seemeth in special to understand Achores and Favi, when (in his sixth Book, Chap. 28. Title, touching the several kinds of Pustules, and the Cure of them) he thus writeth: But out of Pustules (saith he) there now and then arise likewise small Ulcers that are either more dry, or more moist; and they are accompanied sometimes only with a kind of Itching, but otherwise they are also attended with an Inflammation, or with pain: and there issueth forth either Sanies or Pus, or both of them. And this especially happeneth unto such as are yet in their Childhood, and then but very seldom in the midst of their body, but very frequently in the higher parts thereof. But now Sycofis or Ficus, is a Tumor so called from the resemblance it hath with a Fig (because that in the Cavity thereof there is something found like unto Fig seeds) round, somewhat hard, reddish, and Ulcerous; from which there is something small and glutinous or clammy, that now and then floweth out of it, breaking

forth of the Chin, and especially the Beard; and sometimes also it breaketh forth in the Hair. From whence it is that Celsus (in his sixth Book, and Chap. 3.) constituteth two species thereof; where he thus writeth: There is likewise (saith he) an Ulcer, that from the likeness is bath with a Fig. is by the Greeks named Sycofis. And here the flesh groweth forth; and this is indeed the general name thereof. But now under it there are two species: the one whereof is an hard and round Ulcer; but the other moist and unequal. Out of the hard there floweth forth something that is small and glutinous; but out of the moist there issueth forth more, and that of a very ill savor. Now both these are in those parts that are covered with Hair. But then indeed that which is callous and round breaketh forth more especially in the Beard; whereas (on the other side) that which is moist appeareth chiefly in the Hair. It is bred likewise in the Arse; and then the Latines call it Marisca.

But here we meet with very great variety of names, especially among the Arabians. And not heretofore only, but likewise there is great variety of difference that occurreth in explaining the cause thereof. For Galen in his Book of preternatural Tumors, and Chap. 16. asserteth that a salt flegm; but in his first Book of the Composition of Medicaments according to the places, Chap. 10. he saith that a humor mingled of a thin, wheyish, and corroding, and likewise of a thick, glutinous, and clammy juice, is the cause as well of the Achores, as of Favi. Paulus Aegineta in his third Book, and Chap. 3. writeth that a nitrous and salt flegm is the cause of both these Affects. Alexander in his first Book, and Chap. 8. mentioneth three Humors, viz. Choler, Flegm, and the Melancholy Humor. And indeed the upshot of the whole Controversie is this; That these Affects do arise from a Salt and nitrous flegm, with the which there is mingled one while Choler, another while Blood, and sometimes likewise a Melancholy Humor.

In special, as for what concerneth Psyrdracia: Psyrdracia, the Author of the Book of Medicaments that are easily provided, unto Solon. thus defineth them; viz. That they are small Efflorescencies made in the Head, like unto those Bladders that rise high in the superficies. And Alexander Trallianus in his first Book, and Chap. 5. and Paulus Aegineta in his fourth Book, and Chap. 3. following the aforesaid Author, have reckoned up Psyrdracia amongst the Affects of the Head; and thus they define Psyrdracia; Psyrdracia are certain small eminencies, like unto little Bladders or Pustules (those that we call Phlyctene) spread up and down upon the surface of the Skin. Yet notwithstanding that Author of the Introduction unto Galen, ascribeth Psyrdracia likewise unto the whole body; when he saith in his 15. Chapter, That

*Psydracon* is commonly so called, because that it is an Efflorescence all over the Body, and about the white of the Eye, somewhat red in the top thereof.

### The Causes.

The Cause of this Tubercle is a humor mingled together, of Blood, Choler, and a salt and nitrous humor.

The Signs may easily be gathered out of the descriptions already delivered: neither do the *Psydracia* threaten any danger at all.

### The Cure.

They are cured by these following Compositions; as *Al. Trallianus*, in his first Book, Chap. 5. and *Paulus Aegineta* in his third Book, Chap. 3. teach us.

Take the Spume or Froth of Silver, and Ceruss, of each half an ounce; Alum, and the Leaves of Green Rue, of each two drams; these being well bruised and mingled together with Vinegar and Oyl, anoynt the part affected therewith. Or,

Take Rue and Alum; bruise them well with Honey, and impose them upon the Head after it is shaven.

## Chap. 33. Of Strumæ, and Scrofulæ.

There is moreover another kind of Tumor, which is not excited simply from a humor poured forth into the external parts of the Body or diffused through them; but a humor in which the matter that is the cause of the Tumor is (in a peculiar Membrane) concluded and shut up; and the humor that exciterh this kind of Tumor is changed into almost another kind of Substance. Among these Tumors, in the first place we are to account *Strumæ* and *Scrofulæ*: and indeed touching *Strumæ* in the Neck (or the Kings Evil, as we commonly call it) and *Bronchocele*, we have already treated, in the second Book of our Practise, Part 1. Chap. 25. where we have likewise written much of *Strumæ* in general. And yet notwithstanding, here in this place likewise there is something more in general to be spoken touching the same; in regard that (as we shall by and by shew you) they do not only seiz upon the Neck, but also upon divers other parts.

But although this kind of Tumor may not unfitly be referred unto a *Scirrhus*; yet notwithstanding they are not called by this common name; but these Tumors are called *Choirades*, or *Scrofulæ*; the appellations being taken from Swine, that are more frequently troubled with this Malady. And yet notwithstanding *Paulus Aegineta* in his sixth Book, and Chap. 35. rendereth another reason of the name, to wit, from the Rocks *Chirades*: For *Chirades* is a black Rock in the Sea, that is tough and somewhat eminent, so

that it seemeth like unto a swimming Hog: unto which Rock indeed (by reason of the roughness of the Tumor) this Disease may be resembled. But yet some there are that seem to make a Difference betwixt *Scrofulæ* and *Strumæ*, when they write that *Scrofulæ* are hardened Tumors, and such as are included within a certain Membrane in the Glandules or kernelly parts; the which if they be generated out of the Flesh, then they are to be called *Strumæ*; but most Physicians reject and approve not of this difference. For *Strumæ* are a Scirrhus Tumor of the Glandules, as *Galen* defineth it in his 14<sup>th</sup> Book of the Method of Physick, Chap. 11. and such as is shut up in a peculiar Membrane. For the Glandules or Kernels are the Subject of *Strumæ*; and he truely they arise most commonly in the Neck (both the fore part and the hinder part thereof) and yet sometimes likewise in the Arm-holes, and the Groins. *Megeter* a certain Chirurgeon (of whom *Galen* also maketh mention in his Book of the Method of Physick, the last Chapter) hath also observed that these *Strumæ* often arise in the Paps, as *Celsus* writeth in his fifth Book, Chap. 18. And we have told you before in the third Book of our Practise, Part 3. and Chap. 5. that *Strumæ* have been likewise sometimes found in the Melenterium. If this Affect appear in the Throat then by a peculiar name they call it *Bronchocele*, *Bocius*, and *Hernia Gutturalis*. This is a great and round Tumor of the Neck, between the Skin and the rough Artery; in the which there is included sometimes Flesh, and another while a certain humor like unto Honey or Fat. But yet notwithstanding these *Scrofulæ* differ from other Glandulous Tumors; and that first in the number, because that in *Scrofulæ* there are very many Kernels that swell up; and one dependeth upon the other in the superficies of the Skin, like unto Grapes that hang down from one and the same Bough; and moreover, because that *Scrofulæ* have deeper Roots then the other Glandulous Tumors.

### The Causes.

But now these *Strumæ* have their original from a flegmy humor, and likewise (according to others) from a Melancholly, or else from a humor mingled of Flegm and Melancholly: whereupon it is that such as are Flegmatick, Melancholly, Gluttonious, that are wont to eat meats that are cold & moist, and to drink cold waters, are most especially troubled with these *Scrofulæ*. And hence it is that in certain Regions where the Inhabitants make use of Crude and snowy waters, they are all of them for the most part afflicted with the said *Strumæ*. But now these *Strumæ* are generated, not suddenly, and all at once, but by degrees, one after another, and first of all the matter floweth in unto one Glandule, in the which there is excited a Tumor



soft and loose; and then unto another, in which there is in like manner excited a soft Tumor, which in a short time is hardened; until at the length there hang down from the place affected many Glandules, as it were so many Boughs or Branches.

*Actius* in Tetrab. 4. Sermon. 3. Chap. 5. out of *Leonidas*, tells us of a twofold manner of the Generation of these *Strumæ*, where he thus writes: *These Strumæ* (saith he) *are a Flesh somewhat white, easily encreasing and growing, contained in a Membrane; and in brief, they are Glandules hardened, that arise in the Neck, under the Arms, and in the Groyns, where the Glandules are situated under the Vessels, like as also in other Glandules already mentioned. And sometimes likewise (but this is very rare) they are bred from the Flesh of the self same places, which by a certain affinity is converted into the nature of Strumæ, and is augmented by the access of Matter.* For first of all, the Glandules of the said parts (in like manner as all other parts, the Flegm being dried, or the Melancholly humor, or both of them together mingled) become hard like as a *Scirrhus* doth. But sometimes the very substance of the Glandulous flesh being dried waxeth hard; which yet notwithstanding being afterward moistened by the melancholly or Flegmy humor, increaseth, and becometh preternaturally augmented. Yet notwithstanding, in regard that both those waies of generation are coincident, and in a manner one and the same, *Galen* thereupon seemeth for the most part to sleight this difference, and in his Book of preternatural Tumors, Chap. 11. he there saith, that such as are affected with hardened Glandules may properly be said to be affected with *Strumæ*.

But yet notwithstanding touching the Causes, we have before in the place alleadged acquainted you, that *Platerus* determineth, that Flegm alone, and the Melancholly humor, are scarcely sufficient to generate *Strumæ*, seeing that if they were from those alone, they would not then be of long continuance, but they would rather be obnoxious unto putridness or turned into *Pus*, like as are other Tumors; but that these *Strumæ* derive their original from a Juyce nourishing these parts. For whereas Glandules are nourished with a thicker Juyce than other fleshy parts; if this Juyce exceed in Quantity, it then generateth divers kind of Tumors. But although this be altogether to be granted; yet notwithstanding this is not altogether impossible, but that some melancholly and flegmy humor be mingled together with the aliment of the Glandules.

Now this matter of the *Strumæ* is included in a peculiar Membrane, which the formative faculty (that is seated and planted in all the parts that have life in them) produceth. For when as there is some Membrane distended, or even broken, by the superfluous humor that floweth there-

to, Nature extendeth and dilateth the same; and attempteth the structure and forming as it were of a new Membrane.

### The Differences.

These *Strumæ* are by some distinguished into Malignant and Benign; and they will have those to be benign that are without an Inflammation, & without pain; and those they will have to be malignant that have with them both Inflammation and pain, and that are the more exasperated by Medicaments. But we must know, that those *Strumæ* that are termed malignant, are not properly *Strumæ*, but a Tumor as it were mingled of *Strumæ* and a Cancer; so that this Tumor doth not alone proceed from a flegmy and Melancholly humor, but it hath likewise mingled together with it a black Choler. They are likewise distinguished in this manner; that some *Strumæ* are free, others of them infiltrated. Those of them are said to be free, and simple, that are not complicated with any Vessel, or tied together with such of them as are knit together either with some notable Vein, or some Nerve, and are as it were wrapped and folded within them, these we call *Strumæ* infiltrated, or baply (as by a name more fit and congruous) *Strumæ* implicated.

Those things that should have been further declared touching these *Strumæ*, have already been propounded in the place alleadged, viz. in the second Book of our Practise, Part 1. Chap. 35. and there they may be seen.

### Chap. 34. Of Ganglium, and Nodi.

*Ganglion*, so called by the Greeks, and by the Latines *Ganglium*, is by some reckoned up among the Affects of the Head. But by *Paulus Aegineta* in his fourth Book, Chap. 16. and Book 6. Chap. 39. and by *Actius* in Tetrab. 4. Sermon. 3. Chap. 9. it is attributed unto many parts, and it is an Affect of the Nervous parts; and by the Author of the Physical Definitions it is thus defined, viz. that it is a preternatural rowling together, or knot of a Nerve, which groweth together into one Body. The very same Tumor *Guido* in his second Tract, Doct. 2. Chap. 4. seemeth to call it *Lupia*; and *Tagautius* in his Chirurgical Institutions, Book 1. Chap. 13. writeth, that it appeareth in *Actius* (out of the Cure *Philagrius*) that *Lupia* of the modern Physicians, the *Glandula* of *Avicen*, and *Ganglion* of the Greeks, is one and the same Affect.

But by what names these Tumors are called by the Germans is not very evident. For if we well weigh the Descriptions, and Signs, yea and the Cure likewise of *Ganglion*, and *Lupia* of the Greeks, and the same Physicians, as also of the

*Glandules of Avicen*, *Ganglium* is that Affect which by the Germans is called *Überbein*, so called, not that it is indeed a Bone, but because it is a Tumor upon a Bone, to wit, in that same place where the Bones are only covered with the Skin, or because it resembleth the hardness of a Bone. Notwithstanding *Platerus* doth not call those Tumors that arise from the Nerves (and which Authors every where describe under the name of *Ganglium*) by the name of *Überbeine*, but a peculiar kind of Tumor, when (the *Periostium* being shaven, or eaten through) there springeth up, and groweth unto the former as it were a new Bone. But now that Tumor which he propoundeth under the name of *Ganglium*, viz. which is bred about the joynts, especially the Knees, sometimes comprehending the whole Joynt (and this one while in a more narrow, and other while in a broader limit, and sometimes also so stopping and hindering the motion thereof that the Member is altogether either motionless, or else so that it cannot be wholly and entirely moved) seemeth to be that

Tumor which the Germans call *Glied-schvva*; to wit, because (as it were a certain Mushroom) it ariseth under the Skin, neer about the Joynts, and especially the Knee, which is not alwaies round, but often overspreadeth the whole Knee; when yet notwithstanding *Ganglion* is alwaies a round Tumor, as *Ambrose Parrey* writeth in his sixth Book, and Chap. 20.

But (as I told you likewise before) there is a great confusion in the names. And therefore (as *Job. Tagautius* in the first Book of his Physical Institutions, and Chap. 2. adviseth us) the thing it self is to be heeded with all care and circumspection; and as for the names, we need not much to regard them; since that oftentimes one and the same word hath in several Authors various and different appellations. *Ganglion* ariseth indeed in all, or the most parts of the body, (and yet more especially in those parts that are moved) neer about the Joynts, to wit, In the Hands and Feet, and in those very places where the Bones are only covered with Skin, and where there is a concurrence of the Tendons, Ligaments, and Nerves. And yet notwithstanding *Aetius* addeth the Head and Forehead, as likewise the Elbowe and Arms; but it is but seldom that it happeneth in these parts.

### The Causes.

That it hath its original from a blow, or from hard labor, *Paulus* and *Aetius* teach us; which is indeed to be understood of the evident cause. But how these evident causes come to produce those Tumors, is not so evident and manifest. Vulgarly, the greater part do imagine that they arise from a dull, sluggish, thick flegm, or else from Melancholy. But others asser (and that

more rightly) that by means of some fall, by reason of extension, or of some extraordinary hard labor, and over working, (by all or any of which either a Nerve or a Tendon is too far extended, or likewise, according to the Membrane, even as it were broken) the nutriment of the Nervous part doth as it were sweat forth, and adhere neer about the Fibres and the substance of the same Nervous part, and so becometh changed into this substance by reason of the formative faculty of the said parts, and then covered with a peculiar Membrane. After which manner (if the *Periostium* be opened) even in the Bones, their nutriment is turned into a boney knot, as *Platerus* giveth us to understand. For look as it is in Trees, if their Rind or Bark be wounded, or in any other manner opened, Nature sweating forth the aliment suffereth it not rashly to diffuse it self all abroad, but changeth it into a knot; so in like manner, albeit the Membranes that wrap about the Bones or Nervous parts may be broken, yet Nature permits not the aliment rashly to flow abroad through the open passages, but from thence (under the Skin) formeth a Tumor, included and shut up in a peculiar Membrane.

But now that *Ganglion* that *Platerus* describeth happeneth not from the default of one only Nerve or Tendon, but chiefly in those places where there is a concurrence of Tendons, Ligaments, and Nerves; and especially about the knee, either when those parts by reason of their overgreat motion are very much exercised, or else while Wounds are in curing. For if the juyce of these parts, to wit, of the Tendons, Nerves, Membranes, and Ligaments, shall chance (upon the occasion of the aforesaid Causes) to flow forth abroad out of the said parts, and shall withal begin to be luxuriant, and to abound, and shall likewise adhere unto the Fibres of the same parts, it is then changed into such a like fungous or Mushroom-like matter, which oftentimes overspreadeth the whole joynt; and is thereupon by the Germans called *Der Gliedshvva*.

And yet notwithstanding it may likewise so chance, that a vitious humor abounding in the body may flow in into such a like weak part, and may be mingled together with the said thick juyce that nourisheth these parts, and may (through that open passage) flow together with it unto the aforesaid parts, and may there augment the Tumor.

### Signs Diagnostick.

This Tumor is bred in those parts that are not covered with much flesh, but only by the Skin; and therefore it lieth not hid very deep: and it is now hard, now soft; now greater, now less; and sometimes it is in bigness equal unto (and many times greater than) an Egg; it is void of all pain, and yet notwithstanding if it be forcibly pressed together, it then manifesteth a certain kind of dul-

and stupid sense; it may be thrust and moved unto the sides, but neither forward nor backward.

That *Ganglium* which *Platerus* describeth is a Tumor for the most part arising in the Knee, soft, without pain, and of a different color; from small beginnings sometimes encreasing to so great a bulk and magnitude, that it comprehendeth the whole joynt; from whence it changeth that the sick person can neither stand upright, nor go straight; neither is he able in going to tread upon the ground, or at least (as it were) only on tip-toe.

### Prognosticks.

1. This Disease is of long continuance, and oftentimes lasteth for many years; and accompanieth the sick parties even unto their dying day.

2. Those of them that are in the very junctures of the joynts, impede and hinder the motion of the whole Member.

3. The *Ganglium* likewise that is neer about the Joynt (unless it may be taken away by Medicaments) is altogether incurable. For it admitteth not of Section or cutting, in regard that it may easily happen, that by Section a Nerve, Tendon, or Ligament may be hurt.

### The Cure.

Universal or general Remedies having been first premised, it is requisite that the Tumor be mollified and discussed; or (if this cannot well be done) that it be suppured, or cut out. Therefore if *Ganglium* or *Nodus* (the Knot) be recent and new, and the little Bladder within which it is included be yet tender; we must then in the first place do our endeavor that the said bladder may be broken. And therefore the Tumor is to be rubbed with the hand so long until it wax hot, and become softer; and afterward let it be clove pressed together with some thin plate, or some other solid thing, so long that the bladder may be broken, and that the matter therein included may be thereby dispersed. And therefore let a thin plate of Lead be imposed upon the place affected, and bound close upon it with a Swathe; which is not to be removed until after ten daies. Others there are that first of all anoint the Tumor with Ammoniacum dissolved, in the form of an Emplaster, and then after they apply a thin plate of Lead. *Oribasius* made use of this that followeth:

Take Cerus, Pitchy Rosin, old Oyl, Ammoniacum, Galbanum, of each one ounce; Wax four ounces; mingle them, &c. Or,

Take Aloes, and Myrrh, of each six drams; Licharge of Gold one ounce; Ladanium half an ounce; Ammoniacum, the Fat of a Calf, and of a Fox, of each six drams; Oyl of white Lillies two ounces; Wax as much as will suffice; make an Emplaster. Or,

Take of unslaked Lime, the Fat of a Goose, of each one ounce; Ammoniacum half an ounce; Turpentine one ounce; mingle them, &c. Or,

Take of the Emplaster Oxycroceum one ounce; the Mucilage of Marsh-mallow seed, and Fennugreek seed, of each half an ounce; Galbanum, Sagapenum, and Ammoniacum dissolved in Vinegar, of each three drams; Rosin six drams; white Wax half an ounce; Mingle them, and make an Emplaster. Or,

Take Gum Ammoniacum, Bdellium, Galbanum dissolved in Vinegar, of each one ounce and half; Oyl of white Lillies, of Camomile, of Bay, the Spirit of Wine, of each half an ounce; the powder of the Flowerdeluce Root, and live Sulphur, of each half a dram; mingle them, and make an Emplaster.

If the *Ganglia* give not way unto these Medicaments, we must then betake our selves unto those Remedies that cause suppuration. As for Example:

Take the Roots of white Lillies, and Marsh-mallow Roots, of each an ounce and half; the Root of Fern one ounce; fat dried Figs, in number ten; the Root of Squills (or the Sea Onion) one ounce; the Flowers of Melilote, and Elder flowers, of each one small handful; boyl them in the Broth of a Wether-Sheeps Feet, adding thereto a small quantity of Vinegar. Afterward let them be well bruised together, and then pass them through a hair sieve, and then add; of Wheat flour, and the flour of Lupines, of each half an ounce; the fat of an old Sow, Ducks fat, and Goose fat, of each two ounces; the Dregs or Lees of the Oyl of white Lillies three ounces; and so make a Cataplasme.

*Ganglia* and *Nodi* may likewise be taken away by Section; such alone of them that consist in the Head, the Forehead, and other places without the Joynts. But those of them that consist in the Joynts are not safely to be cut; there being cause to fear lest that the Nervous parts that lie underneath be hurt thereby, and so consequently the motion of the Member quite taken away. As (in like manner) it is not fit to cut those *Ganglia* that are neer about the Jugular Veins, for fear of an Hemorrhage or flux of blood. Now for the manner of Section, it is this: First of all, there must be made a small Wound in the Skin, even unto the bladder wherein the matter of the Tumor is included; through which a Probe of the thickness of a finger, and round at the end, but hollow in the midst, is to be conveyed in betwixt the Skin and the bladder, and then to be drawn about even unto the very Root of the *Ganglium*: and then after this (upon it) the Skin is to have an Incision made therein deep enough, in the form of the letter X; and from the corner of the Bladder it is to be drawn along towards the Root: and if there arise any Hemorrhage from the



the thicker Vessels upon their being cut about the Root, it is in a fit and convenient manner to be stanch'd and stop't; and then upon this the whole Tumor (together with the Membrane) is to be extracted and drawn forth, and no part thereof to be left remaining behind; or if haply there should be any thereof left behind, it is then to be consumed with Caustick Medicaments.

Callous or Boney *Nodi* (by *Platerus* so termed in special) are hardly cured, and not at all, if they be inveterate and hardened. Such of them as are curable are to be cured by those or such like Emollients as were even now propounded. Here likewise those Cataplasms are very useful that are made of *Mandrake* Root, the Leaves of Hemlock, Henbane, the dead Nettle, boyled in Vinegar, and mingled together with Emollient Greases.

If these *Nodi* tend towards the Joynts, and so hinder their motion, and have their abode in those places that are naked, and only covered with the Bones, then the Skin is to be opened; and with a sharp Iron, the *Nodus* (by a continued stroke) is to be cut away from the Bone; and the Wound is then to be cured in a fit and convenient manner.

*Ganglia*, in special so called (or those Muthron-like spongy Tumors that arise about the Joynts, and especially the Knees, sometimes wholly comprehending it, and hindering its motion) are not to be cured without much difficulty. For Section (in regard that it cannot be administr'd without hurting the Tendons, Ligaments, and Nerves) hath here no place. And therefore we ought to assay that by Emollients and Digestives they may be dissolv'd: but yet notwithstanding we ought evermore to beware that there follow not any suppuration hereupon, which in these places is wont to excite incurable Ulcers, by which the Nervous parts neer about the Joynts are corrupted.

In this case the Medicaments before propounded are likewise very useful and profitable. Or else let a Fomentation be provided of the Roots of Marsh-mallows, white Lillies, Briony, the wild Cucumber, Sowbread, the Leaves of Mallows, Marsh-mallows, dead Nettle, Henbane, Ground-pine, Sage, Primrose, the flowers of Camomile, Elderly Wall-flowers, Melilot, Linseed, Fenugreek seed, Bayberries. Or,

Take the Kernels of Walnuts three ounces; the meat or flour of Lupines one ounce and half; the powder of Flowerdeluce Root, and Earthworms, of each an ounce; Honey as much as will suffice; and make a Cataplasme. Or,

Take Ship-Pitch two ounces; dissolve it in the Oyl of Earthworms, and the Oyl of Flowerdeluce, of each one ounce and half; and then add thereto of Ladanum and Mastick, of each two drams; Bdellium, and Styrax Calamine, of each one dram; the powder of Earthworms half a dram; mingle them, &c.

The *Diasulphur* Emplaster of *Rulandus* is likewise here very useful, and of singular benefit: but especially, and in the first place, Natural Sulphury Baths.

### Chap. 35. Of Meliceris, Atheroma, and Steatoma.

These kind of Tumors have this one thing proper and peculiar unto them, to wit, That the matter that is contained in them is shut up in a peculiar Tunicle, or little Bladder. And they take their name from the matter contained in them. For if the matter that is shut up within be like unto Honey, it is then called *Meliceris*, (and the Latines usually call it *Mellifavium*;) if it be like to Frumenty (which the Greeks term *Atheria*) we then call it *Atheroma*; and lastly, if it be like unto Suet, it is then by the most called *Steatoma*. For *Meliceris* (as it appeareth out of *Galen* in his fourteenth Book of the Method of Physick, and Chap. 6. and out of *Aetius*, *Tetrab.* 4. Serm. 3. Chap. 7. as also out of *Paulus Aegineta*, in his sixth Book, Chap. 36. and lastly, out of *Celsus* in his seventh Book, and Chap. 6.) is a Tumor without pain, containing a matter like unto Honey that is shut up in a little Nervous Skin. But *Atheroma* is a Tumor without any pain, containing in a Nervous Tunicle a Humor like unto Frumenty, or a Pulvis. And *Steatoma* is in like manner a Tumor containing within a peculiar Membrane a Humor like unto Suet.

But now touching *Meliceris*, it is here to be noted, That it is a Disease not one and the same with *Meliceria* (of which *Aetius* maketh mention in his fifth Book, and Chap. 28.) but a disease different from it. For *Meliceria* (as *Celsus* himself hath it) is a kind of Ulcer, that is so called from the resemblance it hath with a Beehive; which said Disease we have already explained in the second part, and Chap. 3. of Infant Diseases, and by others it is likewise called *Kerion*, *Favus* or Bee-hive; and it is an Ulcer that is very full of holes, chiefly peculiar unto the Head, pouring forth at those holes a corrupt matter like unto Honey; and it hath its original from flegm that is salt or nitrous. But *Meliceris* (touching which we are here treating) without any hole at all, in whatsoever part of the body it happeneth to be, it containeth within under a Nervous Membrane a substance like unto Honey.

#### The Causes.

Now all these Tumors are referred unto the Humors or Flegmy, and they are vulgarly said to be

*Meliceris*  
what it is.

*Atheroma*  
what it is:

*Steatoma*  
what it is:

be excited from a Picuitous or Flegmy humor, which in progress of time is by degrees and slowly changed into a Matter that is sometimes like unto Honey, sometimes unto Frumenty, and now and then likewise resembling Suet.

*Platerus* (as we also before told you, in the second Book of our Practise, Part 1. Chap. 25. where we treated of *Struma*) hath a peculiar Opinion by himself touching the Causes of these Tumors. For he thinketh that these aforesaid Tumors are generated from excrementitious humors (for if any such thing should be generated out of these kind of excrements, he conceiveth that it could not be so stable and firm, but that it would rather be obnoxious to putridness and corruption) but from an alimentary Juyce, to wit, such as is by Nature ordained for the nourishing of the part. For if the humor be thicker than is convenient for the nourishing of a fleshy part, then (saith he) a harder sort of Tumors then are the *Sarcomata* are sometimes produced; and again, if this humor be extraordinary thick, then a *Scirrhus* is generated. But if the Tumor be not so hard, then in a short time it endeth in an *Impostume*, in the which there may be generated a different matter, according to the difference and Variety of this Juyce that hath bred this Tumor, & the mingling thereof with other humors; which yet notwithstanding is not suppurated in like manner as other *Impostumes* are that are bred from the Blood; neither is it turned into *Pus*, but into another kind of substance that is included in a proper Membrane, or Bladder. And in this manner (as he writeth) are generated *Melicerides*, *Atheromata*, and *Steatomata*. But he addeth likewise that unto the generation of such like Tumors as these this conduceth very much, to wit, if together with this Juyce that ought to nourish the flesh, a portion of that Nutriment of some other part (that ought to be nourished by an extraordinary thick Juyce) departing from it, and being carried into the fleshy seats together with their Nutriment, there beget in them such an hardness. And this he likewise endeavoreth to prove even by this Argument, to wit, that in these kind of *Impostumes* bred from those Tumors there is to be found something like unto the substance of other parts resembling sometimes Hair, sometimes a Nail, sometimes a Bone, and now and then a Glandule; which (saith he) could not well any otherwise be bred, or produced from any thing else then the juyce nourishing these parts, either in the Skin, or in the flesh neer unto it, as being hither brought & conveyed together with the proper Nutriment of the Flesh. And from the same he conceiveth that it cometh to pass, if at any time there be found in an *Impostume* any thing that resembleth a Bee-hive, a Pulsife, or Honey; that this proceedeth from the fatter part of the Blood, that causeth a fatness; and this indeed he conceiveth to be from the fleshy Juyce that is not as yet converted into *Pus*, but

by maturation by means of the heat boyled as it were and hardened into such a tenacious humor; the which if it be any further torried, inasmuch that this Juyce become more earthy, then it resembleth something else, as Coals; smal Stones; or Gravel, and the like. These things if they be in a proper and peculiar Membrane, then (as he writeth) these also are bred from a Membranous Juyce proceeding from hence.

But now, as touching this Opinion, there are certain things to be taken notice of. For first of all; it doth not yet from hence appear, what the cause is why such like tumors as these are not bred in all bodies, neither yet in all parts, out of that Juyce by which they are nourished. And hereupon; the Cause that is to be rendred why that humor floweth out of the parts, and that thereupon a Tumor is excited under the Skin, I conceive to be this, that the Membrane that covereth any part whatsoever, and encompasseth it, is (either by some external and violent, or else by some internal Cause) either broken or corroded and eaten quice through, and exulcerated (which in the Generation of *Nodi* or knots in the Bones, *Platerus* granteth that it may so happen in the *Periostium*) so that the way and passage being opened, the aliment or nourishing Juyce flowing forth is no longer kept in and shut up in the part affected, but that it sweateth forth through this open passage. Which yet notwithstanding Nature that is never idle permitteth not rashly to be done; but it begetteth further to extend the very Membrane it self, and to shut up the Juyce flowing forth; like as we see it to be done in Trees where (the external Bark being cut) there is in the very like manner a *Nodus* or knot formed. And moreover, that the Juyce which affordeth matter unto the Tumor is chiefly destined and ordered for the nourishing of the part, this I wil readily grant; but yet *Platerus* himself cannot deny but that in progress of time vicious humors may be likewise driven forth thither. Neither is it requisite that it should be immediately converted into *Pus*; in regard that the vicious humors mingled together with the aliment may for a long while retain their own Nature, without any corruption, and conversion into *Pus*; as it evidently appeareth in the *Cachexy*, and *Scabies* or Scabbiness, and the like affects in the Skin. But I very much doubt and question, whether that different matter that is found in such Tumors hath its original from the proper aliment of the neer adjoining parts; the Hairs, the Nails, and the Bones, flowing together into some other place, and there mingling it self with the proper aliment of the part affected. Neither is Matter sufficient, or all that is required unto the formation of Hairs, Nails, Bones, and the like, but first of all, and especially there is necessarily required the formative faculty, which in the fleshy part formeth Flesh, and in the membranous part a Membrane; and not Bones; and there

there is unto each particular part a proper and peculiar Membrane, which if it cannot attain unto its own end by reason of the unaptness of the matter, it then formeth something like unto it; and in a fleshy part it effecteth something that is like unto Flesh, and in a membranous part somewhat that resemblerh a Membrane.

### Signs Diagnostick.

All these Tubercles or smal Tumors have their rise from a very mean and inconsiderable beginning, and they are long, and by little and little increasing; and they are included each one in its own peculiar Tunicle. And *Meliceris* is indeed more round in figure, and more extended, and when pressed down by the Fingers (by reason that the thickness of the humor is not great) it speedily yieldeth and giveth place, and upon the removal of the Fingers it as speedily returneth back again. For although *Paulus Aegineta* in his sixth Book, Chap. 36. writeth that *Meliceris* yieldeth unto the touch, even as if it were some loose body; and that it is slowly diffused, but very soon collected and gathered together again; yet without doubt, the text is depraved, and something omitted by the carelessness and oversight of the Writers, which appeareth even from this, that he altogether omitteth the Signs of *Atheroma*. And therefore without all doubt it is thus to be read, the omissions being supplied out of *Aetius*; *Steatoma* is harder then the other, and resisteth upon the touch, and having the bottom thereof more solid. But *Atheroma* yieldeth when it is touched, as it were a certain loose body, and returneth back but slowly; but *Meliceris* giveth place speedily unto the touch, and then it is very suddenly again collected. And although *Steatoma* be hard; yet notwithstanding it differeth from *Struma*, because it is nothing so hard as *Struma*; neither hath it an unequal Tumor, like as *Struma* hath.

But what these Tumors have within, as it may be guessed at by conjecture, so true it is that it cannot be certainly known, unless it be when they are cast forth; as *Celsus* tels us, in his seventh Book Chap. 6.

### Prognosticks.

1. The truth is that these Tumors have no danger at all conjoynd with them: and yet notwithstanding they oftentimes continue long, & are (without any hurt) carried about, and neglected.

2. Yet notwithstanding they often of their own accord rood in an Impostume. Which if they do not, they are not so difficultly cured as *Scrofule* and *Scurbi*.

3. Those of them that are elevated, and exposed unto motion, and the touch, are easily curable. But such of them as are seated and fixed more deeply, and not exposed to the Touch, are more difficultly cured; and in Chirurgical attempts

they require the greatest care and diligence, by reason of the imminent eruptions of Blood, and the pricking of the Nerve. For very many Chirurgeons there be that (for want of skil) together with these like Tumors cut away those Nerves that lie under them.

### The Cure.

Although these Tumors differ in their names, and each of them contain a peculiar Matter: yet notwithstanding they have almost one and the same way of curing. For Universals and generals being premised, and the Body thoroughly purged from the vitious humor, the matter that is the cause of the Tumor is together with the Tunicle to be taken away: which is done if the matter be either dissolved; or (if that may not conveniently be done), suppurated; or else if the Tumors be cut forth. In *Meliceris* this threefold kind of Remedy hath its place; *Atheroma* is Cured by Dissolvives and Suppuratives, and for the most part hath no need at all of Section. As,

Take *Laudanum*, *Bdellium*, *Galbanum*, *Ammoniacum*, *Propolis*, and *Turpentine*, equal parts of them all; and mingle them.

Very useful likewise is the Emplaster made of *Ammoniacum*, *Pellitory*, and the Oyl of the Juycetherof; by which I have seen such a Tumor cured in the Jaw-bone broken, and long white strings like threads (such as are sometimes found in Cancers) drawn forth.

Unslaked Lime also mixed with Grease or Oyl is very useful, and of singular benefit. Or,

Take Ship-pitch one ounce, *Ammoniacum* and *Sulphur*, of each half an ounce, Mingle, &c.

Take of the Root of Sowbread, and Swinea Grease, and a little *Sulphur*; and of these make an Emplaster.

If the Tumor open not of its own accord, then Section is to be ordained; that so the little Bladder (whether it contain a Substance like Honey, like a Pukile, or a fat substance, or any other) may be pulled forth, and taken away. But the Skin is not to be cut transversly or overthwart, but strait forward, or else somewhat obliquely, like unto the figure and form of a Myrtle Leaf; and the Membrane containing the humor is to be freed from the Skin, and the part lying under it; great care and caution being had, lest that the said Membrane or Bladder be hurt (which wil most certainly be, if the Skin be not dissected and opened with one touch of the Instrument) and so the humor that is contained therein flowing forth all abroad hinder the operation, and by this means there be some of it, or something of the humor left remaining behind. And yet if this should chauce, and somewhat should be left behind, it is to be consumed by these Remedies that we call *Catharticks*. For if there be any part of that Tunicle left to remain, the Tumor wil again return.



If these kind of Tumors be in the Head (the little Bladder being taken forth) let the *Pericranium* be cut, and the Skull shaven, lest that there be any Root that may be able to generate a new Tumor left remaining behind. But if the sick person wil at no hand admit of this said Section, or if otherwise it may not conveniently be done by reason of the Veins, then the Skin is to be broken through by Caustick Medicaments. The little bladder being taken forth, the Ulcer is to be consolidated; and if the Skin be more loose and extended than it ought to be, so that it cannot conveniently be drawn together; in this case whatsoever is superfluous is to be cut away.

### Chap. 36. Of Testudo, Talpa or Topinaria, and Natta.

**A**ND hither likewise belong those Tumors, which (to speak truth) are referred to *Melicerides*, *Atheromata*, and *Steatomata*. But because they privily happen unto the head, therefore they have peculiar names imposed on them; which yet notwithstanding we find no where extant in the more Ancient Greek or Latine Authors; but they have been invented and hammered out by the more modern and barbarous Latines; to wit, such as are these; *Testudo*, *Talpa* or *Topinaria*, and *Natta*.

*Testudo*  
what it is.

To wit, *Testudo* is a great Tumor, soft, or at least not very hard, in the Head, of a broader form, like unto, and after the manner of the Tortoise; from the likeness whereof it hath taken its name; growing forth at the first in the form and fashion of a Chestnut, but afterwards in the figure of an Egg; in the which there is contained a soft kind of matter (a certain Tunicle being drawn over it; from whence it is by Authors referred to *Melicerides*) which sticketh so fast in the Skull, that for the most part it virieth and defileth it, and bringeth upon it a polluting rottenness.

*Talpa* Neely allied unto this is the Tumor *Talpa*, so called because that look as the Mole (by the Latines called *Talpa*) runneth under ground, just so this Tumor under the Skin feedeth upon the *Cranium* or Skull. Some of those aforesaid Latine Barbarous Authors comprehend this Tumor under the name of *Testudo*, neither do they make any peculiar mention of *Talpa*. But others of them have their peculiar Tracts touching this Tumor *Talpa*; and *Vigo* in his second Book, Tract. 3. and Chap. 1. doth expressly distinguish *Talpa* from *Testudo*; and the truth is, they differ in their matter, which in *Talpa* is more thick and gross than in *Testudo*. And therefore like as we have said that *Testudo* may be referred unto *Meliceris*, so may *Talpa* be referred to *Atheroma*. Some call it *Topinaria*. But others notwithstanding say that *Topi-*

*naria* is a different Affect, and such as is familiar and common unto Children; and that it is bred out of sweet flegm; which is manifestly declared by the viscoulness and clamminess of the rotten filthiness, as also by the whiteness thereof: and sometimes from a flegm mingled with Blood; as the color declareth, which is not very red, and it soon cometh to a maturity; and sometimes likewise from Melancholy, or Choler; as *Gulielmus Placentius* writeth of this same Affect in the first Book of his Chirurgery, and Chap. 5. *Johannes Philippus Ingrassias*, in his Book of Tumors, Tract. 1. Chap. 1. without any the least scruple conceiveth that this Tumor is to be referred to *Hydrocephalus*. But in regard that *Hydrocephalus* is bred of Water, and hath no blood at all mingled therewith, neither may be suppurated, this therefore cannot be granted unto the said *Ingrassias*, nor by any means allowed of.

*Natta* And lastly, there is another Tumor which they call *Nata*, *Natta*, and *Nap-ta*, being great and soft, without any pain and color; growing forth especially in the back, and sometimes notwithstanding breaking forth in the shoulders, and other parts; hanging by a smal slender Root: but yet to greatly encreasing that it weigheth some pounds; and is in bigness equal unto a Melon, or Gourd; which because it hath not alwaies one and the same form and figure, it hath likewise therefore by Authors divers and several names conferred upon it. The matter that is therein contained doth indeed now and then seem to be fleshy; but in truth it is no flesh, but like unto fat; and therefore it may not unfitly be referred unto *Steatoma*.

#### The Causes.

They refer the cause of these Tumors unto a salt flegm, or else a flegm mingled with Choler. But in regard that these Tumors may be referred to *Melicerides*, *Atheromata*, and *Steatomata*, it may therefore most sily be determined and asserted, That these Tumors have the very self same cause that those said Tumors have: only here lieth the difference, That in these there is greater store of matter, and thereupon it is likewise that these Tumors arrive at a greater bulk and bigness than the former.

#### Signs Diagnostick.

These Tumors are easily known from the descriptions before declared; for they are soft Tumors, or at least such as are not very hard; broad and large, and shut up in their peculiar Membrane.

#### Prognosticks.

1. If these kind of Tumors be in the Head, they then are dangerous; by reason of the vicinity and nearness of the Skull; in regard that they corrode the Skull; and corrupt it; especially about the Sutures.

2. If there be present a great corruption of the Skul, it is then far better to let this Tumor alone, and not meddle with it, than to cure it.

3. Those of them that are without any corruption of the Skul, are cured with more safety.

4. Like as it was in the Tumors mentioned in the former Chapter, so it is likewise in these; unless the whole Tunicle be drawn forth together with the humor, there is no perfect health and soundness to be expected, or hoped for; since that if there be any thing left behind, there will from it a new Tumor arise, and break forth.

### The Cure.

Universals and generals being first premised, and the body sufficiently evacuated, the matter constituting the Tumor is to be taken away, which is done by digestive and resolving Medicaments, or by those that suppurate, or by Chirurgery. And therefore if the Tumor be without any Ulcer and corruption of the bone, then let discussing Medicaments be administered. Now the Discussives are such as are wont to be used in *Scrofule* and Tumors. But it is somewhat rare that these Tumors are cured by Discussives. If therefore they cannot be so taken away and removed, to wit, by Discussives alone; then Maturatives and Suppurating Medicaments are likewise to be administered; such like as have been already propounded in the foregoing Chapter. Or,

Take Onions roasted under the Embers, the Yelks of Eggs hard boyled, of each three in number; Swines Grease, or unsalted Butter half a pound; the Root of Marsh-mallows boyled to a softness, and bruised very small one pound; and make a Cataplasim.

And yet notwithstanding we are not to expect and wait for a perfect Concoction and generation of Pus, in regard that Pus easily and soon gets a sharp and malignant quality, and so corrodeth the Skul. And therefore so soon as any signs of Suppuration shal appear, the Tumor is maturely to be opened. The Incision is to be either simple and downright, or else it is to be made in the form and figure of a Cross, according to the bigness of the Tumor. The Pus being wholly evacuated, the Ulcer is to be thoroughly cleansed by convenient Medicaments; as for example, with such as this,

Take Barley Meal two ounces; Myrrh half an ounce; Sarcocol one ounce; Honey as much as will suffice; mingle, &c.

The Ulcer when it is thoroughly cleansed is to be filled up with Flesh, and consolidated.

If the bone be corrupted, it is then to be shaven, and to be cured in like manner as it is wont to be in the rottenness of the bones.

But as for the Cure by Chirurgery, it is to be

ordained and instituted in like manner as was declared in the Chapter foregoing.

### Chap. 37. Of Verrucæ or Warts.

There are moreover other Tumors likewise that are said to have their original, not from humors, but from a solid substance. But since that these same humors take their original either from a vitious and luxuriant juyce nourishing the parts, or else from excrementitious humors mingled together with them, we will therefore subjoyn this kind of Tumors unto those that were but even now explained, and treated of.

And first of all, there are indeed certain small Tumors that arise in the Skin, like unto little hillocks, which are called *Verruca*. *Verruca* or *Porri*. For with the Latines *Verruca* is properly the higher and more eminent part of a Mountain or Hill, and according to *Gellius* (in his third Book, and Chap. 7.) the rough part thereof; whereupon it is that those places are termed *Verrucosa* that are unequal, and have divers eminent parts. But now these *Verruca* from their several forms have gotten divers and several appellations. For one is called *Sessilis* (by the Greeks *Myrmecion*, and by the Latins *Formica*) which is fixed and fastened with deeper roots; broad beneath, and slender above; and this thrusteth forth it self in the Skin less than the other kinds of them; and it is likewise stable and permanent, and not altogether so movable as the rest. Now they conceive that it is so named either from their blackish color (such as there is in Ants or Pismires) or else because that when it is hard pressed, it exhibireth a sence of pain like unto the bitings of those aforesaid Pismires; and it is for the most part bred in the Hands, or likewise in the Feet; neither is it altogether without pain; and in this there appeareth sometimes a hair or two, and that especially in the face. Another sort of them is called *Pensilis*, because that it hangeth down by a little foot, or as it were by a Harp-string; from whence it is by the Greeks called *Acrochordon*; it hath but a very small Basis, but a long and great Head.

This Tumor if it be not of the same color, but that it resembleth the flower of Thyme, and be less, and more unequal, and small, they then call it *Thymum*. But now if these *Verruca* be greater, they are then (from the resemblance they have with a Fig) called *Ficus*. And hither likewise may *Condylomata* be referred, as also *Crista ani*; touching which we have already spoken in the third Book of our Practise, Part 2. Sect. 1. and Chap. 10. where we treated of the Diseases of *Intestinum rectum*, or the straight Gut.

There

*Clavus*  
what it is

There is also another kind of *Verruca* like unto the *Sessilis*, which they call *Clavus*, but the Greeks call it *Helon*, and we in English a *Corn* or *Quern*. Those *Verruca* are white, round, like unto the heads of Nails; and for the most part they arise in the Toes, and the soles of the Feet, so that they excite and cause great trouble and pain in going. This kind of Tumor *Verruca*, in regard that it hath a dusky or black spot in the midst of the circumference of that Skin, which is likewise of the same color, like unto the *Pupilla* of the Eye, and by means of it resembles the eye of the Pye, is by the Germans termed *Egsterauge*, which with us is as much as the Eye of that Bird we call the Magpie.

Now these *Verruca* are bred in divers parts of the body; but more frequently in the hands and feet; and for the most part they appear many of them together.

### The Causes.

All these Tumors, according unto the vulgar opinion, arise from a matter, thick, melancholick, and flegmatick, the which Nature (when she is no waies able to dilucid it) formeth out of it this kind of Tumors.

But *Platerus* (as he did by the former Tumors that were neerly allied unto these) assereth that the *Verruca* likewise are bred of a juce that is by Nature destined for the nourishing of the Skin, and the Scarf-skin, after the same manner. As the hardness that yet consisteth in their substance generateth a Callousness, and Cicatrices; even so a part and portion thereof breaking forth into one or more parts of the Skin, adhering unto the Skin, and growing unto the roots, and issuing forth it generateth a very smal portion, filling up the pore, hard, and callous; which one while is carried forth without the pore, as in *Verruca Penilis*; other while it remaineth still therein, as in *Verruca Sessilis*, and also in *Clavus* in the feet. But now, that this juce should thrust it self into the pores, the dilatation and wideness of them may very well be the cause thereof: which as it proceedeth from divers causes, so in the feet (the skin being in one place hard pressed down, and by this means the pore being widened) the Tumor *Clavus* is easily generated. In the hands likewise, whereas they there also often appear and expose themselves unto the view, *Platerus* conjectureth and conceiveth it to be very credible that these *Verruca* proceed from external injuries.

There are some also who determine that these arise likewise from contagion; as if the blood fall out of a *Verruca* (when it is cut) upon some other part, there may then a *Verruca* be generated in that part; and if any one shall use that linen with which the blood that came forth of these *Verruca* was taken up and cleaned away, even upon

the use and wearing of the said linen *Verruca* (that is to say, Warts, and Corns) may succeed and follow thereupon.

### Signs Diagnostick.

These *Verruca* are easily known from the descriptions already given; and so may also their differences; so that it will be altogether needless here to deliver any peculiar signs; for indeed these Tumors are vulgarly and sufficiently known.

### Prognosticks.

1. *Verruca* oftentimes vanish of their own accord, without the help and assistance of any Medicament.

2. *Myrmecia* and *Clavi* notwithstanding, unless they be cured, are scarcely ever known to disappear and vanish.

3. *Acrochordones* are not so hard to be cured, when they have roots that are but smal and slender: but now the rest of them when they are fixed and fastened with a broader root require more forcible and efficacious Medicaments.

4. *Acrochordon* if it be cut out, it then leaveth no little root, and therefore indeed it cannot well return, and arise anew. *Thymium* and *Clavus* being cut out, there ariseth underneath a round smal root, that descendeth very deeply unto the flesh; and so (the root being left behind) it again ariseth. *Myrmecia* stick fast with the most broad roots; and thereupon they cannot indeed be cut forth without some great and dangerous exulceration. Thus *Celsus* in his fifth Book, and Chap. 28.

### The Cure.

Now these *Verruca* are taken away either by Medicaments, or by Chirurgery. The Medicaments are such as effect this, either by an occult and secret propriety; or else such as dry up the aliment of them; so that the *Verruca* do afterwards wither and vanish away.

*Fallopins* commendeth the Leaves of the Willow or Sallow Tree, or the juce of them. But if the green Leaves may not be had, he then maketh use of the powder of the Willow Leaves, mingled with Vinegar either simple, or Scillitick. They likewise use Figwort, the Roots of Water Dragons, of Cuckowpint, and of Sowbread. They commend also the new and fresh gathered Roots of *Celandine*, with the juce whereof they anoint the *Verruca* or Warts. Others first of all burn them (once and again) with the yong tender sprigs of the aforesaid *Celandine*, and then afterward they apply Water-creaser and Mustard. There are some likewise who think that these *Verruca* may be taken away by a certain specifical propriety that is in Purslain. The *Verruca* are likewise taken away, if they be rubbed with Nightshade and Urine, if they be washed with the



liquor that is gathered out of the Leaves of Mullein, and laid thereto with the Flowers of the same, with the Decoction that is made of Mustard, Sulphur, and Salt, with Vinegar; if the Leaves of Savine after they have been for three daies together macerated in Wine be imposed upon them; if Herb Robert, Rue, and Millfoyl, bruised together, be applied. That Cichory likewise which they call *Verrucarium* (the name being given it from *Verruca*) is of singular use and benefit; as also the milky Juyce of the stalks of the Herb Lions-Tooth, as likewise of all other Eadive and Succory-like Plants; the Water that sweateth out of Vine Branches while they are in burning; the Meal or Flour of Chicheling Pease, as they vulgarly call them.

And for the *Verruca* or Warts, and *Clavi* or Corns, in the Feet, this following Emplaster is like wise very efficacious.

Take Ship-pitch one ounce, Galbanum dissolved in Vinegar half an ounce, Sal. Ammoniac. one scruple, the great Diachylon Plaister one ounce and half, mingle and make an Emplaster.

But if these and such like avail not, we must then betake our selves to those Remedies that are stronger, and such like as have in them a Caustick virtue, yea even unto the actual fire it self; and yet notwithstanding Caustick Remedies are not to be administred without a great deal of caution (especially in the Nervous or sinewy places) and so, that they may only touch upon the *Verruca*; and therefore the part that lieth round about is first of all to be wel guarded with Wax, or some kind of Emplaster.

For this end and purpose there is usually administred the Milk of Figs, and Spurge or Milkwort; and that indeed the Milk of the aforesaid *Tithymal* or Spurge is in it self alone very efficacious, *Valefcus de Taranta* writeth that it is so found to be by experience. Unslaked Lime mingled with Sope is also profitable; which said Medicament will be the more effectual, if there be added a little calcined Vitriol, or Verdigrease, or a Caustery prepared of Sope Lye. Or,

Take the white of an Egg hardened in boyling, Verdigrease and Allum, of each one dram; mingle &c. Or,

Take Green Garlick, and when it is newly bruised let it be applied to the *Verruca*, and let there be a little Cap of Wax imposed thereon, and wrapt about with a Swath, to keep it fast on. Or,

Take Orpiment, and let it be mingled with Ozymel, or the Milk of the aforesaid Milkwort or Spurge, and let it be put upon the *Verruca*. Very useful likewise is the Oyl of Vitriol and Sulphur. And *Johannes Andreas a Cruce* doth here indeed in a wonderful manner commend the Oyl of Vitriol; and in this manner he applieth it. He provideth a little Knife of Lign-aloes, or the like, and this he dippeth in the Oyl of Vitriol,

and by this means he freeth the *Verruca*; with which otherwise it is freed by an Iron Penknife.

The Chirurgery by which *Verruccae* are taken away is described by *Galen*, in his fourteenth Book of the Method of Physick, Chap. 17. by *Paulus Aegineta* in his sixth Book, Chap. 87. and by *Rhases*, in his Book of Divisions, Chap. 124. And it is performed either by extraction, or excision, or else by adustion. They are extracted and pluckt forth with a Quill; the Circle whereof let it be equal unto the *Verruca*; with this Quill let the *Verruca* be on all sides streightened and hard bound; and then afterward let the *Verruca* be loosened and drawn round about, and so by this means it may together with its root be pulled forth. The same is likewise performed by the Silver Pipe. There was one at Rome that usually pluckt them forth by sucking, and his Teeth together, as *Galen* in the place alleadged informeth us.

They are cut off, either by something tied about them (to wit, the *Verruca Tensiles*) as for instance, by a silken Thred, or some other Thred that is strong, or else by a Horse Hair, still by degrees streightening and drawing close together the bond, until the *Verruca* fall off. And if there remain behind any of its Root, it is to be wasted and consumed by a Caustery. Or else it is to be performed by an Iron, or fitting Pen-knife, so that the *Verruca* must first of all be scarified round about; and afterward let it be cut off with a sharp Pen-knife, and with the Phlebotomy Instrument quite grub'd up by the Roots.

They are actually burnt, either by a little stick of the Beech Tree, lighted at one end; or else by a long sharp Iron Bodkin, heated red hot, and applied to the *Verruca* through a smal Cane, that so the neer adjacent parts may not be hurt or offended. Or if a thin Iron plate having a hole bored through it according to the bigness of the *Verruca*, be so applied unto the said *Verruca*, that the *Verruca* alone appear through the hole, and then afterward it may be burnt with a red hot Iron, or with the flame of Fire. The burning being performed and ended, the Escar is then to be taken away, and the Ulcer to be healed in a fit and convenient manner. *Fallopins* (if other Remedies be not sufficiently prevalent) burneth the *Verruca* with Sulphur, after this manner. He taketh the middle shél of a Walnut, and boreth it through according to the bigness of the *Verruca* or Wart, and so applieth the convex part thereof unto the place in which the Wart appeareth, so that it may strictly and closely comprehend the *Verruca* or Wart, and that the *Verruca* may appear forth through the hole into the Cavity or hollow part of the shél. After this he puts in Sulphur into the hollow of the shél, and kindleth it; which being melted, and kindled, the *Verruca* is so long to be burnt as the Patient can wel endure it; and if it cannot at once doing this be wholly extirpated,

extirpated, the aduſtion is to be repeated three or four times, in the manner aforeſaid. When the place ſhal be healed, it is then for ſome daies to be rubbed with the Leaves of Sallow, and ſo covered therewith that the Verruca may no more return, and ariſe anew.

Touching *Thymia*, and *Criſtiani*, we have already ſpoken in the third Book of our Practice, Part 2. Sect. 1. Chap. 10.

### Chap. 38. Of Cornua.

**V**ery many there are that refer *Cornua* unto the aforeſaid *Verruca*: and they determine that they are a certain longer kind of *Verruca*, and ſomewhat crooked like unto a Horn. But this name is both by the Arabian Phyſicians, and thoſe of theſe latter times likewiſe extended far wider. *Avicen* in the ſeventh of his fourth Book, Tract. 3. Chap. 14. writeth thus touching theſe *Cornua*. *Cornua* (ſaith he) are thick additions, crooked, ariſing above upon the Joints, in the extremities, by reaſon of the vehemency of their operation; and the cure of them is Inciſion, that ſo that which is altogether inſenſible and without pain may be removed out of them; moreover let there be adminiſtered upon the reſidue thereof Medicaments that are vehemently ſharp and acute (out of thoſe Medicaments that are made uſe of in the *Verruca*) until it ſal; and then let Butter boyled be adminiſtered and applied thereunto.

*Avenzoar* in his ſecond Book, and Chap. 5. hath ſomthing to this purpoſe: I have heard (ſaith he) my Father ſay, that he once ſaw a certain man that had bred in his back a bone like unto the Unicorn's Horn, but it was leſs hard than a Natural bone. And my Father purged away the groſſ humors that were in this man, and afterward he put exſiccative Medicines upon the bone; upon which the ſaid bone fel forth like as the Harts Horns ſhed and fall off in the Spring. And I my ſelf likewiſe had once a bone growing upon my back, which brought upon me much grief and pain: I then purged my ſelf from groſſ humors, and I put upon the aforeſaid bone Reſolutives; ſo that it was for the greateſt part reſolved; and that little remainder thereof was no binderance at all unto me in the exerciſe of my natural operations. Therefore whenſoever thou find the like, do as I have ſaid. And when thou purgeſt them, do not purge them only with the virtues of Medicines, but even with the very proper Medicines themſelves. And in the number of the better Minerals (for the purging of theſe) the *Lapis Lazuli* is one; but without all doubt there is great help to be had from the Loadſtone, in this caſe: but for my own part I make little or no uſe of the Loadſtone in my practice, in regard that the *Lapis Lazuli* ſufficeth me;

and I commend unto you the operation thereof.

But yet ſome there be of the latter Writers that reckon up theſe *Cornua* among the Affections of the Head; touching which *Lanfrancus* (in his Tract. 3. Doct. 2. and Chap. 3.) thus writeth: I have likewiſe ſeen (ſaith he) manifelt eminencies of the Skul, like unto Horns. For I once ſaw a man that came unto me for advice that had in his Head ſeven eminencies, one greater than the other, and they were in divers places. Of which one was as big and acute as the Horn of a Kid, a finger long, or as long as ones thumb, and it much hurt and annoyed the Skin: and I admired that the Skin was not exulcerated. When therefore I ſaw that it had its original and root from the head, I would by no means be perſwaded to undertake the Cure, but rather perſwaded the ſick perſon that he ſhould put himſelf into no mans hands, in hope of Cure, for that it ſeemed unto me altogether impoſſible. But *Johannes Philippus Ingraſſias*, in his firſt Tract of Tumors, and Chap. 1. relateth that he ſaw at *Panormus* a certain Noble Virgin (a Girl) that was afflicted with very many of theſe crooked excrescencies, that were withal ſharpened in the top of them, like unto Calves Horns, almoſt in all the Limbs, and eſpecially in the Joynts of the Hands, the Arms, and the Knees, as alſo in the Head, and the Forehead. But yet notwithstanding (ſaith he) theſe Tumors were not bred in the Skin, but upon it, and that indeed in a certain new order of generation. For like as the generation of the ſtone happeneth in the bladder, to wit, that one Tunicle as it were coming upon another, it encreaſeth unto a greatneſs; ſo in like manner we be held in them very many (as it were) boney cruſts ſticking the one to the other, juſt in ſuch a faſhion alſo as if we ſhould put the half rinds of Filberds one upon another, the leſs ſtill upon the greater, that ſo they may be joyned together in an acute and ſharp form, and the ſhape of a Pyramid. But theſe when they were touched about the baſis and bottom of them, were extremely painful; and they ſtuck ſo faſt in, and were of ſuch an extraordinary hardneſs that no Phyſician being able by any kind of Remedies whatſoever to yield the Patient any help or relief, her kinned at the length (after that the Diſeaſe, and the growth of theſe *Cornua* had for many years continued) came unto me. For they were continually augmented both in their bigneſs, and (divers other new ones budding forth) in their number alſo: whom (by the gracious aſſiſtance of Almighty God) we recovered unto her former beaulty and ſoundneſs, and alſo unto her former beauty, and comely feature. Who notwithstanding was become ſo deformed and miſ ſhaped, that ſhe was now become more like an ugly Monster, and frightful Devil, than to any Woman kind; inſomuch that her Parents much rather deſired her death than her life. *Julius*

*Julius Caesar Scaliger* in his 199. Exercitat. Sect. 5. writeth, That for the growing of these *Cornua* upon men and women (making them like unto Monsters rather than unto what indeed they are) although he was told thereof by Prince *Abolalis*, and by that person of note *Abumeron*; yet notwithstanding their great Authority and credit, he could not believe a thing so strange, until he himself saw one of them on the back of a certain Rower, that had been for a long time in the *Triremis* (a long Boat with three Oars so called) of the *Ligurians*.

*Alexander Benedicinus* in the first Book of his Anatomy, and 14. Chap. telleth us, that in *Crete* he saw a black horn most like unto the head of a wild Goat growing forth in a mans Knee that was wounded by an Arrow; and that the matter that ought to have been converted into the substance of a bone was easily (by the blowing in of the Air) turned into an borney Nature, and soon got unto it self an hardness, after the manner of Gums.

And *Fallopins* in his Book of the similar parts, Chap. 7. writeth, That sometimes likewise in whol bones as well as in fractures there may be something bred like unto a horn; and that this same horn may grow forth without the flesh and the skin; and that he himself saw this at *Padua* in the thigh of a certain noble man; out of whose thigh there grew forth as it were a little long stake or post.

*Zacutus his  
observation  
touching  
Cornu bred  
in the heel.*

*Zacutus* in his second Book of the Administration of Practical Physick, Observ. 188. relateth that a certain poor man naturally melancholick, long complained of a pain he had in the heel of his right foot; and that he there felt a certain hardness, that afterward grew forth into a Tumor of the bigness of a smal Chestnut, hard, rough, and leaden colored; which in eight months time so encreased that it was become an hand breadth long, and resembled a true horn. Which after it had been cut off (by the advice of Physitians) no symptoms following thereupon, and the body purged twice every year, he lived for two yeers in sound and perfect health. But after this he suddenly grew sensible of extream and intollerable pain in the very same place, and in six months the *Cornu* grew forth again, hard, and encompassed about with most sharp pricks, and was in length at least one hand breadth and an half. The which being again cut, in the very bottom thereof there was left a little hollow place, out of which there flowed forth great store of a black stinking humor, of so corroding a nature, that it soon eat through the flesh neer unto it. We then indeed purged his body with Medicaments that were fit and proper for the evacuation of the melancholy humor; and there were likewise Sudorificks of the China Root administered; but all to no purpose. And therefore

to intercept the flux there were several lilles made, one in the Leg that was sound, four fingers below the Knee in the external part; another in the Leg affected eight fingers above the Knee, or else in the Thigh in the inside thereof. He was every month purged; and so by this means the *Cornu* was hindered from growing again any more; and the Ulcer was healed of its own accord, and covered over with a Cicatrice.

#### *Nodi.*

And hither (without al question) belong and are to be referred the *Nodi* of *Platerus*, (touching which we spake above in the thirty fourth Chapter:) which are the hardest sort of Tumors, sticking firm and fast in the bones that lie under them, and which cannot be made to remove their place from the said bones; as if some new bone were now grown unto the former; which kind of Tumors are bred about the Temples, and the Forehead, and also about the length of the Ankles, in those naked Regions. And these Tumors either begin of themselves, or else they accompany other Diseases, as the French Pox, and one certain kind of the *Cephalea* Affect.

#### *The Cure.*

These *Cornua* and *Nodi* are very hard to cure; and they often continue all the whol life time. And yet notwithstanding if they be neer unto the Joynts, so that they hinder the motion of them, or if they cause continual pain by pressing upon them, they are then to be amputated and cut off; which may be done the more safely in regard that they consist in the naked bones that are only covered with the skin. The skin is first of all to be opened, and the *Cornu* or *Nodus* to be made naked and bare; and after that it is to be cut away from the bone with a sharp Iron Knife, and the Wound to be cured in a fit and convenient manner.

### Chap. 39. Of Fungi.

THAT Affect which the Latines call *Fungus*, the Arabians call *Fater* and *Fatera*, and they refer them unto the Tumors of the Brain. *Galen* by the way and cursorily maketh mention hereof, when in his first Book of the place affected, Chap. 1. he thus writeth: And now (saith he) even likewise of those things that spring up and grow unto other things, the notes and marks of the place or seat affected are to be sought for. For why, such things as adhere and cleave unto others obtain the propriety of Essence, like as do Fungi (which the Greeks call *Mycete*) if upon the breaking of the Head the *Meninx* or *Membrane* chance to be broken. *Avicen* likewise maketh mention hereof, in the fifth of his fourth Book, Tract. 3. Chap. 2. where he saith thus: And when the Cranium or Skull is broken, and the Vail or covering goeth forth, there is then also caused



caused an Impostume that is named *Fatera*. And we treated of this Tumor in the first Book of our Practice, Part 1. Chap. 25. But (as sometimes we wrote unto that eminent and worthy man *Gulielmus Fabricius*, as is to be seen in the second Century of his Observations, Observat. 25.) this kind of Tumor as indeed it may arise very frequently from the Membranes of the Brain, so it may also be bred in other parts; as you may there find two Histories by me produced, for the further confirmation thereof. The former whereof is this. A certain Youth

*A History*

there was about ten years old, that in leaping hit his left foot hard against the ground, and by this vehement stroke he hurt the sole thereof over against the little toe. Upon this a Tumor began by little and little to increase, insomuch that it had soon gotten over all the foot, and exceedingly distended the skin; so that the toes (by reason of the tumor or swelling coming between) stood at so great a distance the one from the other. And yet notwithstanding the skin in color was like unto the sound part. There were by divers Physicians (as the manner is) divers means attempted, and different Remedies put in practice, but all in vain. At length his Friends went unto a Chirurgion for his assistance, who when he saw the place very sore, and found that the pain increased, conceived that there was now already a suppuration made, and thereupon without any more ado he opened the place, out of which there issued forth a little blood, but no Pus at all. And in a short time after there ran forth as it were a certain kind of fatness, by the which the Wound was quite shut up. Within a few daies following there began to break forth these Fungi in great abundance, full of black wheyish blood. And in the sole of the foot neer unto the little toe one night there happened as it were a benumbedness and deadness as large and broad as half a Rix Dollar. This being opened, yet notwithstanding there fell forth no putrid and corrupt matter; neither could any of the dead flesh be separated, but the flesh was in appearance like unto a burnt sponge, all bloody, swelling and strutting with blood, and destilling it. They began likewise to shew themselves in other places, to wit, at the sides of the foot, and above the ankles; most loathsome and frightful to look upon; insomuch that that part of the foot did equal (or indeed exceed) in bigness a child's head. At length he proceeded to Section, and the middle part of the foot, even to the Navicular bone, and the heel bone, was cut off. That which was thus cut off was wholly a hollow spongy flesh, partly putrid and corrupt, and partly curdled, thick, and like unto a clammy porous fatness, and weighing well neer four pound. But on the following daies a Spongy flesh brake forth again with great violence; and look how much there was taken away in the day time, there grew again as much in the

night. And lastly, there arose a great swelling in the Thigh (nigh unto the left Groyn, in the place where the Glandules are) in shape much resembling that which at first was seen to appear in the midst of the foot; which afterward brake of its own accord; out of which there grew forth great store of spongy flesh. And so not long after the Boy died.

The other History is this. A Boy twelve years old was greatly troubled with the pain of his teeth. At length it came to this, That they must be drawn. One of the upper teeth is accordingly drawn forth. Upon which there afterward arose a Tubercle in the Palate neer unto that Tooth, as big as a Prune stone. This being soft, and not opening of its own accord, it was conceived that there lay some Pus or purulent matter under it; whereupon it was opened, and at first there flowed forth nothing but some few drops of blood: but then afterward there brake forth a spongy and blackish flesh, which so far increased, that it did not alone hang forth at the mouth, but grew forth likewise by the Nostrils, and at length brought death upon the Child.

*Another History.*

And *Gulielmus Fabricius* in his second Century, Observ. 199. relateth likewise an History of a Fungus that had its original from *Gurgulio*, that wholly filled up the Palate, and reached well nigh unto the fore teeth. And another he mentioneth in the following Observation, that arising from *Gurgulio* was altogether as big as an Hen Egg, and it so stopped up the little holes of the Nostrils that end in the Palate, that the sick party could hardly breathe; neither could he speak distinctly, and so as to be understood.

This *Gulielmus Fabricius* in his third Century, and Observat. 1. tells us yet likewise of another Fungus that he had seen growing out of the Ear, and that he cured the same. And in his fifth Century, and Observat. 62. he mentioneth yet another Fungus that sprung and was bred out of the very Center of the Navel. This kind of Tumor *Gulielmus Fabricius* in his third Century, Observat. 36. conceiveth that it is to be referred unto those that we call *Natta* or *Napae*. But what these *Napae* are, we have before declared in the thirty sixth Chapter. And although there be something of Fungus contained in the aforesaid Tumor *Natta*; and albeit these Tumors may in the general be said to be Fungus: yet notwithstanding that is covered over with the skin; but Fungi properly so called (and of which we are now treating) hang forth all naked and bare without the skin, and there they grow and increase. And therefore likewise they breed not in the whole and sound Membranes of the brain, but they are bred in them when they are wounded, bruised together, and hurt.

The subject of these Tumors is a Membrane, that is any waies hurt, or wounded, or bruised.

*The*

*The Causes.*

*Johannes Philippus Ingrassias* (touching the Cause, and the manner of generation of these *Fungi*) writeth that this *Fungus* is wont to be bred in like manner as in Candles lighted or Lamps we see the *Fungus* (in the Winter time especially) that is wont to arise and appear in the top of the Wick of the one, and the match of the other; and which is with weak and simple Women a notable presage of Rain suddenly to follow; even as *Virgil* (in the first of his *Georgicks*) and *Pliny* likewise in his eighteenth Book about the end thereof, do both of them attest. For when the Air begins to be moist, the sparkles that were wont to pass forth with the smoke, being now prohibited and hindered, by reason of the thickness of the Air, do there reside in the Lights, and there they represent as it were certain resemblances and Images of *Fungi*. And just so it is in the Membrane of the Brain, when it is discovered and laid open, at the first there is a certain substance that representeth the likeness of that soft and Cotton-like tender Hair that is found upon the heads of new born Infants. But then afterwards the vapors being disscussed by exhaling, and the Fumes being made to assume a round form in that substance by the coldness of the Air, they are by little and little burnt and extremely dried by the more inward heat, until at length there appear also a substance like unto the said *Fungus*, signifying that the Membrane is altered by the Air.

But in very truth, it is indeed to be granted, that these kind of *Fungi* are generated from a superfluous humor, as it were sweating forth through the hurt Membranes; but that this matter may be even detained there by the coldness of the Air, and that it may likewise be there exsiccated merely and only by the heat, is altogether false, and therefore not to be granted. For these *Fungi* cannot possibly be so suddenly generated after this manner, and get such a growth. But it is most agreeable unto truth, that the humor destilling forth into the soft Flesh (that is spungy like to the Mushroom in Trees) is changed by the formative faculty of the part; and that Nature which is never idle doth change and form into this substance the humors flowing thereunto, which by reason of their abundance (as likewise their unfirmness for motion) and the debility of the part, it can by no means possibly convert into the aliment and substance of the said part.

*Signs Diagnostick.*

This kind of Tumor is very easily known. For out of a Membrane hurt and bruised, or wounded, there shoots forth a soft Flesh, spungy, and pale, and not covered with the Skin; and suddenly it attaineth unto a great and extraordinary growth.

*Prognostick.*

This Malady is very dangerous, and hard to be cured; and if it be not handled aright, it easily turneth into the Nature of a Cancer.

*The Cure.*

Universals having been first premised (the which it is not our purpose here to mention) the *Fungus* it self is to be taken away, which is done either by Medicaments that exsiccate, and corrode, or else by excision and cutting it out.

Medicaments that exsiccate and dry are far more safe then those that corrode and eat through: in regard that by Corrosives the matter is easily exasperated, and so obtaineth the nature of a Cancer. Now such are made of round *Aristolochy*, the roots of it, and of the Florentine Flower-de-luce, Angelica, the true and right *Acorus*, the Leaves of Savine, of Card. Benedict. of *Rotemary*, of Plantane, Horstail, Scorks-bil, the Flowers of Red Roses, Mastick, Frankincense, Myrrh, prepared Tutty, burnt Lead, Sugar of Saturn, *Lapis Calaminaris*, the Althes of Frogs and Sea-Crabs.

But they are to be cut out either by a Silken Thread (tying it about therewith) or else any other strong Thread; otherwise it is done by an Iron. So soon as the *Fungus* is taken away either by the aforesaid Ligature, or Iron, then there ought to be strewed and sprinkled thereupon Powders of the before mentioned Medicaments. As touching these operations, see further in *Gulielm. Fabricius* in the place alleadged; to wit, Century 3. Observat. 1. and Century 5. Observat. 62.

### Chap. 40. Of Tumors Malignant and Poysonous, and in special of Elephantiasis.

**W**E are at length come to treat of a certain kind of Tumors arising from the humors, that have joyned with them a Malignity. Among the which the first we meet withall are the smal Pox and Measils. But because we have already handled them in the fourth Book of Fevers, Chap. 12. we shal here add no more as touching them; but rather refer the Reader thither, for his further information. And then the next we meet withall are those we call *Bubones* and pestilent Carbuncles; touching which we shall likewise here in this place spare our pains in the further treating thereof, in regard that we have also spoken of them in the place alleadged, to wit, the sixth Chapter. There likewise belong hither (in the third place) those Tumors that we term Venereal, of which we shall hereafter treat further in its proper place, among the malignant Tumors

moys. And lastly, there is this *Elephantiasis*, touching which alone we intend here to discourse.

That Affect which the *Arabians* call *Lepra*, we have told you above (in Chap. 28.) that it is

by the *Greeks* called *Elephantiasis*. Now it is called *Elephas*, *Elephantiasis*, and *Elephantia* from

the Elephant; by reason of the likeness and resemblance that this Disease hath with that Creature (the Elephant) to wit, as some conceive, because such as are affected with this Disease become great as the Elephants; but this is but a weak and simple conjecture of theirs, since that those who are affected with the *Elephantiasis* are not made hereby ever a whit the greater (unless haply we have respect not so much unto the greatness of the body in such as are thus affected, as unto the greatness of the danger of death thereby threatened; to wit, that look as the Elephant is the greatest of all the four-footed Creatures; even so among diseases this appeareth to be the greatest, and an Affect almost remediless and incurable) touching which thing *Macer* in his Book of the virtues of Herbs, and Chap. 15. speaketh unto the same purpose.

Or else this Malady is so called, because that creeping along upon the Thighs it causeth them to become (as are those of an Elephant) rough and unequal: or else because that among other Diseases this is exceeding vehement, strong and violent, like as is the Elephant; or otherwise it is so called (and this indeed seemeth to be the most true and genuine reason thereof) because the members & the skin of those that are affected with this Disease are rendered tumid and swollen, scaly, rough and rugged, full of swellings, and unequal, like unto the skin of Elephants. *Galen* in his Book of Tumors, Chap. 14. writeth that this Malady when it first beginneth, is likewise called *Satyriasmus*, in regard that the face of those that are afflicted with this Disease is rendered like unto the face of the said Satyres. For the lips of such as are troubled with *Elephantiasis* are thereby made thick, and the Nose swelleth; and thereupon it seemeth as if it were pressed down; the Ears become flabby and much wasted, the Jaw bones are colored, as it were, and overspread with a certain kind of redness, and in the Forehead there appear here and there Tumors or Swellings, like as if they were certain Horns: although there be others indeed that think the *Satyriasmus* to be so called, even for this very cause, that in the beginning of this Malady the sick parties are extremely libidinous and lustful, like as are the said Satyres. And yet notwithstanding *Aetius* in Tetrab. 4. Sermon. 1. Chap. 120. out of *Archigenes*, tendereth another kind of reason of this resemblance (and that indeed different from the former) to wit, because the Cheeks and face in such as are thus affected are lifted up, together with a certain

redness, and the Chin it self is dilated, upon the Convulsion as it were of the Muscles of the Jaws; even as we see it likewise to befall those that laugh, in a certain kind of likeness and resemblance unto the Pictures of Satyres; which *Caelius Rhodiginus* in his 19. Book of the reading of Antiquities, and Chap. 25. conceiveth to be so called from the Greek word *Seserenai*, because that these Satyres sing and sport themselves with their mouths wide open and gaping, and their lips drawn forth like unto those that laugh. And there are some that give us a third reason and ground of this appellation, to wit, because that those who are affected with this *Elephantiasis* are like unto Satyres in their propension unto Venery, and lustfulness.

It is likewise termed *Leontiasis*, either in regard that this Malady is invincible, like as the *Lion*; or else because (as *Aetius* hath it in Tetrab. 4. Sermon. 1. Chap. 30.) the forehead of the sick person is with a certain swelling rendered and made more loose, after the resemblance of the flexible skin of the *Lions* Eye-brows; or else, because the breath and the very spirits of such as are affected with this Malady do even stink like unto the breathing of *Lions*, and their very excrements also; or else because those that are affected with this Disease have a most filthy and terrible face, inasmuch that (like as do *Lions*) they strike a terror into those that come suddenly and unawares to behold it. This Malady is by our Physicians called the Malady of *St. Lazarus*; because that such as are Elephantiac do so abound and are full of Ulcers, like as was that *Lazarus* the beggar, of whom there is mention made in the Evangelical History, *Luke*, Chap. 16.

Now this is a very sad and grievous Malady, and as it were an Universal, or Cancer of the whole body; whereupon it comprehendeth under it many more sorts and kinds of Diseases. For first of all, there is present magnitude augmented, and a swelling up and down in the body, especially in the external parts, whose beauty, feature, and figure likewise is hereupon corrupted: there is likewise present a hot and dry distemper, by which the parts are so exulcerated and corrupted that at length they fall off. *Celsus* in his third Book, and Chap. 25. thus describeth the whole Idea of this Malady: *The whole Body (saith he) is affected, so that the very Bones likewise may in a manner be said to be vitiated and corrupted. The highest and utmost parts of the body have in them both spots and swellings that stand thick and close one by the other. The redness of these parts is by little and little converted into a black color. The top of the skin is unequally both thick and thin, hard and soft, and is exasperated by certain scales; the body waxeth lean; the mouth, the calves of the legs, and the feet swell, and are puffed up. When the disease comes once to be old, the fingers and toes are quite hidden under the swelling.*



swelling; there ariseth also a light and gentle Feaver, that easily consumeth and wasteth the sick person, that is already overwhelmed with the aforesaid evils and mischiefs.

### The Causes.

The containing cause is black Choler (and this not without malignity) diffused and spread abroad throughout the whol body. Now we find rouching the generating of this humor, viz. black choler, a long and tedious dispute among Authors; and we find them holding divers and different Opinions. In this (the truth is) they all agree, that this humor is generated from the adustion and burning of other humors; but then in this they differ, viz. from the adustion of what humors this proceedeth. *Avicen* in the third Section of his fourth Book, Tract. 3. Chap. 1. seemeth to have comprehended them all; whiles he mentioneth five Species or kinds of this humor. The first is that which proceedeth from the Blood; the second that from the melancholly humor; the third that which is from the adustion of bitter Choler; the fourth that which ariseth from Flegm burnt; the fifth and last, that that proceedeth from the thick, and hot part (as being very apt to be burnt) of the Chyle, as to Instance, from all salt Flesh, Fish, and the like. But although it cannot be denied, that there is here in this case an adustion of humors present, and that salt humors are the cause of this Malady; yet notwithstanding, since that there are very many other Tumors and Ulcers that have their original from adust humors, here therefore the very specifical cause is altogether to be sought for, which notwithstanding cannot easily be explained; but it consisteth in an occult *i. e.* an hidden and secret Malignity. But now this humor is diffused thoroughout all the Veins; and an inductive Feaver is dispersed (without any putridness at all) thoroughout the whol body, and is mingled together with the aliment.

But now there are many things that conduce and make to the generation of this humor. There are some that contract the original seeds of this Malady from their very birth; to wit, such as either are born of Elephantiack Parents, or else conceived during the Flux of the monthly Courses, vitious, and corrupt, and declining unto black Choler. And moreover also the hot and dry distemper of the Members destin'd by Nature for Nutrition (as for example, the Liver, and the Spleen; from whence it is that the Blood and the humors are burnt) is defectively reckoned up and accounted among the Causes of this Malady. And furthermore, the frequent and common use of salt meats maketh likewise very much hereunto, as also the eating of sharp and sour meats, and food that is overgross and thick: the Air also being overhot and dry; or else thick and Cloudy: from whence it is that this Malady is in some

Countries more frequent and usual, and in other Regions scarcely known; as the Poet *Lucretius* tells us in his sixth Book: *Elephas* (saith he) is a Disease that (by reason of the overflowings of the River Nilus) is bred in the midst of Egypt, and no where else.

But although it be true that the Disease is more frequently found there; as *Galen* likewise testifieth in his second Book to *Glauco*, and Chap. 10. (where he acknowledgeth that in *Alexandria* by reason of the fervent heat of that Region, and the unfitting Diet of the Inhabitants, who eat Meal boyled, Lentiles, and Cockles, many salt meats, and the flesh of Asses, with divers other sorts of food that generate and breed a thick melancholly humor, there are more that are troubled with this Elephantiack Disease) yet notwithstanding it is also to be found in other Regions. In *Germany* (especially in some parts thereof) these Elephantiack Persons are very common and ordinary; but in *Spain* and *Africa* they are far more frequently found; and in *Gallia Narbonensis*, and *Aquitain*, there are more of them to be found then in *France* besides. *Pliny* in his twenty seventh Book, and Chap. 1. writeth, that before the time of *Pompey* the Elephantiasis was never known to happen in *Italy*. Living and Converſing likewise with the Elephantiack Persons much conduceth to the causing of the Disease. For the Air (that in breathing is attracted and drawn in) is infected by the stench of the Members, and the vitiated exhalation of the Breath. From whence it is that men deservedly shun the company of those that are thus affected; and for such as are domestick, and therefore necessarily constrained to abide under the same Roof, do yet (as there is good reason for it) shun their company, and all neer Converse with the sick Persons; and therefore even for this cause it is that these Elephantiack Persons are separated from the society and company of others; and are sent away, and disposed of in some open places, in the which they live with most benefit unto themselves, and less endangering others. But especially carnal copulation with the Leprous man or Woman is undoubtedly dangerous and infectious; and so is likewise that carnal society that any one hath with her that before hath had to do with a Leprous man. Unto these same Causes there belongeth also the retention of the Melancholly Excretions; as the suppression of the monthly Courses, and the Hemorrhoids, and the sudden stanching and drying up of long continued Ulcers. For such a like humor as this (if it be detained long in the Body) becometh worse and worse daily, and at length acquieth this malignity, and being retained in the Body it seateth and ferleth it self in the Veins, and infecteth the whol mass of Blood. Moreover this Malady doth more frequently invade and seiz upon men then women; and among men, those especially that have in them

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them Blood that is thick and viscous, tending to black Choler; and such as use a thick and inordinate kind of Diet.

### Signs Diagnostick.

Although (as for what belongs to the signs of this Malady) we have given you some few of them out of *Celsus*, as they are by him recounted and reckoned up; yet notwithstanding it will not be time & pains ill spent to enumerate and declare the whole entire History of the Signs and Symptoms. And therefore in the first place, whensoever this Malady is nigh at hand, there immediately goeth before it, and is present, a sluggishness or slothfulness, and slow and difficult breathing, unfitness for motion, a dayly and continual costiveness of the Belly, Urines like unto the stalings and waters that come from Beasts and the greater Cartel, a Breath slow and stinking, and an extreme propension to Venery. When the Malady hath once gotten forward into the Skin, then the Native and flourishing fresh colour of the Face is changed, there arise red blewish and wan Pustules, the Cheeks and the Chin become thicker, the Veins under the Tongue are swollen up, and wax black, the Hairs fall off, there is present an extraordinary Thirst, and a driness in the mouth both by Day and by Night.

But now as it is in other Diseases, so it is here, that there are likewise certain times of this Malady. The beginning is, when the vicious humor and the malignity is yet but as it were laying siege and beleaguering the Bowels. The increment or increase, when the Malady now shews it self abroad and openly, and that the Symptoms are daily augmented. The state, when the Members are exasperated, and the whole concourse of the symptoms appeareth publicly, the which we shall immediately subjoyn. First of all the Eyes appear exactly round, and the looks thereof are fixed and immovable; which happeneth by reason of the consumption of the fat, and the extenuation of the Muscles; the Eye-lids and the Ears are contracted and drawn together; the Eye-brows fall down, the Nose swelleth outwardly, and is made flat, by reason of the afflux of the humor; and it is streightened within; from whence it is that the passage is obstructed, and the breathing hindred, so that they seem to speak as it were through their Noses; the colour of the Face is wan and Leaden coloured; the aspect and looks frightful; there appear Tubercles and red Pustules under the Eye-brows, about the Ears, and in divers places of the Face, and knots hard and round, like unto Grains; the Lips are made thick, the Bones neer unto the Ears stick forth; the Hairs of the Head shed and fall away; and if the Hair be pulled forth, a part likewise of the white Skin is pulled away together with it; which is a most certain and infallible sign of the

Leprosie. This Malady discovereth it self likewise in other parts: the Veins under the Tongue swell, and become blackish; and the Glandules that lie neer unto the Tongue (and round about it) have in them round Tumors, like unto the Scrofulae that are in Swine, which we call the Swine pox. The Breath stinketh, the Voice is hoarse, shrill, and obscure, by reason that the Lungs and the parts serving for Respiration are filled and beset about with thick & adust humors, and by reason also of the driness and roughness of the *Trachea Arteria*, or the great rough Artery. In the Hands the Muscles are extenuated, especially between the Thumb and the fore Finger; for whereas those Muscles are naturally lifted up into an hilly and manifest swelling, the depression of them and their being emaciated (happening by reason of the defect of Aliment) becomes the more manifest and remarkable in them; the Nails are cleft; there is present a stupidity, and want of feeling in the Ankles, and the Calves of the Legs, and in the Feet also; so that although the sick Persons shall be pricked with Pins or Needles in those places yet they feel it not, in regard of the vicious matter filling up and obstructing the pores & hindering the access of the spirits. The same likewise sometimes befalleth the Fingers and Toes, in the which there is also perceived a coldness and a certain privation of all sense and feeling; and sometimes likewise that stupidity and sleeping (as they call it) chanceth unto the whole Skin between those Fingers, and extendeth it self even unto the Arm; & from the Foot it extendeth it self even unto the Knees, the Thighs, and the Hips; yea moreover the sense of feeling is diminished throughout the whole body in Elephantiac Persons. For all the Nerves and Pores being obstructed and in a manner shut up by the thickness of the humors will not allow and afford any passage unto the Animal Spirits. In some certain places under the Skin there is perceived and felt a kind of stinging (such as is caused by Emmets or Pismires) as if Needles were rubbed thereupon; and likewise a certain kind of itching and tickling, as if there were Worms creeping there, and this is by reason of the adust fumes and burnt vapors ascending up under the Skin. The Skin it self is wholly Unctuous and Oily (so that Water poured upon it will hardly stick and abide) by reason of the melting of the fat under the Skin, and the effusion of fat excrements therein. Others there are that unto these signs add other signs also. They advise us to take some few grains of Salt, and to cast it upon the Blood; because that if the Blood be infected the Salt is presently resolved and melted; but on the contrary, if the Blood be not infected, They command us likewise to cast this Blood into the purest and clearest Water; and if it swim as top, it is corrupted; but the contrary if it sink to the bottom. Others there be that take the Blood and putting it in a clean Linen Cloth they wash it

for if there then appear in it certain blackish, rough, and as it were sandy bodies, it argueth a Leprosie. But there are other signs also of this Malady; and indeed there is scarcely any evil, mischief, or inconvenience, that is not annexed thereunto; and in the which there is hardly any thing within or without that is sound. But yet notwithstanding the Face is especially to be considered; neither is any one rashly to be accounted Leprous, unless the figure of the Face be corrupted. And therefore since that in some Common-wealths there is instituted and appointed an Annual Examination and Search in and about these Elephantick persons, and that this is the chief, if not the whole business of the Physician; he ought therefore to use the utmost of his endeavor, and to be very cautious, that through imprudence, or by a rash and precipitate Judgment he do not cause such to be exiled and banished from all society that are not infected with this Disease; and on the other hand, for those that are infected therewith, that he do not permit them to live and converse with such as are sound, to the great endangering of them. And this he may easily do, if he have in his eye all the signs before recounted and mentioned; and if he will likewise but duly weigh and consider, which of them are proper unto them, and inseparable from them; and what they have common with other Diseases. In the serious examination of all which *Franciscus Valeriola* hath taken extraordinary pains, in the sixth Book of his Enarrations, Enarrat. 5. the Reader may do well to consult the place alleadged. We must not here also pass by in silence that which *Marcellus Donatus* hath in his first Book of the History of things wonderful in Physick, Chap. 4. by which we have occasion given us to think and conjecture, how great the corruption of the blood may possibly be in those that are Leprous. *Annibal Pedemontanus* (saith he) having been for two years vexed and afflicted with an incurable Leprosy, he was at the end thereof taken and surprized with a Pleurisie; and having a Vein opened, this strange thing befel him; the hot Urine that came from him (being in quantity more than the pot could well hold; and upon which there swam a blood at least six ounces in weight) so soon as it was cooled was by the said blood thickned in such a manner, just as if the water had been Milk, and the blood the Curd thereof; so that in its consistency it seemed to be very like unto curdled Milk; yet still retaining its own proper color; of the which there was not one drop indeed to be found that was severed from the rest, and not curdled. The cause hereof is given by the Author before cited, who conceived it to be, and imputeth it unto the thickness and clamminess of the blood, which being thoroughly mingled with the Water, (the actual heat of both of them assisting and furthering the distribution in their mingling together) when it had abated of

its great heat, and was now become cool, gave the occasion of the said coagulation or curdling. And he conceiveth likewise that here the very same thing happened that cometh to pass, when the small parts and pieces that are cut from Hides and Skins are boyled in Water for the making of Glew. For so soon as ever that Water is cooled, it instantly is thrust and forced close together, by reason of the clamminess and sliminess of the juyce; and the like also happeneth in some kind of meats that we eat, that are made of Calves feet, and the feet of other living Creatures.

### Prognosticks.

1. By all which it appeareth, That this Malady is most grievous and dangerous, hard to be cured, and (the truth is) not at all curable unless it be taken in hand in the very beginning and first rise thereof; neither then without much ado and difficulty. For an *Elephantiasis* inveterate and confirmed will at no hand admit of any Cure. For if a *Cancer* (being but a particular disease only) will allow of no cure; how much less will the *Elephantiasis* that is an universal *Cancer* of the whole body, admit and receive any? And indeed there is hardly to be found any Remedy that can subdue and conquer the greatness of this Malady.

2. This Disease is exceeding great and grievous, to wit, from the great store of corrupt humors; and there is in the body an extreme and intense heat, to wit, so great that if any one thus affected (but for a short space) hold in his hand a new and green Apple, it will become wrinkled and withered, even as if it had been for some long time dried by the heat of the Sun and the Air. And this same very malignity hath now of a long time taken deep root. For this Malady discovereth it self but very slowly; neither doth it at all appear before that the malignity of the humors have besieged (as I may so say) and shall have corrupted the bowels. On the contrary, the strength of Nature is but very weak; as it may sufficiently appear from the actions of all the faculties that are generally hurt and weakened.

3. Wherefore like as we do but in vain, and to no purpose at all, take in hand those that are altogether overmastered by this malady, and the long continuance thereof; so on the other hand, it argueth an overgreat despondency and despair in those Physicians, that deny their help and assistance for the cure and recovery of those that but only seem to be affected with this disease, but in very truth are not so. For as *Aetius* writeth, *Tetrab. 4. Seim. 1. Chap. 120. It is a sign of humanity, and an argument of brotherly kindness, in the most extreme and worst of Maladies, to condescend likewise unto those Experiments that in all likelihood, and probability may tend to the quelling and keeping under the rage and violence of the Affect.*

*The Cure.*

As for what concerneth the Cure of this Disease; in the curing of an *Elephantiasis* that is but new begun, it is above all other things necessary and requisite that the vicious humors be wholly removed out of the body; which to attempt wil yet notwithstanding be but in vain, unless there be withal such a like Diet first ordained and appointed, as by the which there may be no more of the vicious and bad humors gathered and heaped up together; but that thereby rather the fault and whatever is amiss in the humors and the body may be rectified and amended. And this is done by such things as cool and moisten, to wit, as they are contrary unto the preternatural distemper, being hot and dry. Broths and suppers are in this case therefore very fit and proper; which may be qualified with Sorrel, Bugloss, and Borrage; unto which likewise (as unto al other food the Patient eats) Harts-horn may be added and mingled therewith; as having in it an especial and peculiar virtue of oppugning and subduing that aforesaid malignity. Let his Meats be such as afford a good and commendable juyce, and withal easie of digestion; his flesh rather boyled than roasted; or if at any time it be roasted, then among other Condiments, Sauces, or Sallades, let there be appointed him these that follow, viz. Sorrel, Lettice, the juyce of Citrons, Vinegar of Roses, and Capars. But chiefly we commend the cream of Barley, with the Milk of sweet Almonds. And on the contrary, let the Patient carefully avoid al salt meats, and such as being salted are then (smoke-dried, and so hardened; al fried and aduft food, al spiced meats; as also Pease, Beans, Onions, Garlick, Mustard, Hares flesh, Harts flesh, Beef, Swines flesh, Fish (that have a viscous and clammy juyce) and generally al other meats that breed a thick, melancholick, and aduft humor. And when the sick person is at his meals thirstie, mere and undiluted Wine is very hurtful for him, in regard that the heat and drinels of the Patients body is thereby augmented: and as for Beer, thick humors are for the most part thereby generated; and therefore it wil be requisite to send out for him another kind of Drink that he may dayly make use of without any the least inconvenience. Of which sort, the chief and principal is that drink that is made of the juyce of sweet ripe Apples, and then thoroughly cleansed from its Lees and Dregs. For this Drink is of singular use and benefit, not only for those that are Elephantick, but likewise for al Melancholy and Hypochondriacal persons, as also for al others, whose Liver and Mesentery or Midriff afford matter and cause of a disease. For it tempereth and qualifieth the melancholy humor, disscueth the vapors thereof, recreateth the Heart, begetteth cheerfulness, tempereth and moisteneth the dryness of the Bowels, and yeldeth a good aliment.

Another Drink there is that is useful and fit for al hot Natures, and hot Diseases (provided that the stomach wil but bear it) and it is made after this manner:

Take of the purest Water three quarts; Sugar six ounces; the juyce of Lemmons, or of the Citron, three ounces; (according to what the stomach of the sick person, the strength of the heat, and the last require) of Citrine Sanders two drams; let them boyl a little; and afterward add, of Cinnamom one dram; and strain them.

Those that are of mean estate and condition may make use of the Pisan, or Barley boyled with Fenel seeds. But this following wil serve them for a more efficacious Drink.

Take Sorrel, Marigolds, Meadow-sweet, of each one handfull; Pimpernel two drams; Shavings of Ivory, and Harts-horn, of each one dram; Raisons stoned and wel washed two ounces; Liquoris rasped and cut into thin slices one ounce; Barley one pound. Boyl them in a gallon of Water until one quart thereof be wasted away. And what is strained forth let it be sweetened with the Syrup or Julep of Violets. Or,

Take the Root of Succory one ounce; Raisons three ounces; Liquoris cut thin half an ounce; Harts-horn, Fenel seed, of each one dram; boyl them in a gallon of Water, almost unto a third part. And what is strained forth, sweeten it with the Syrup of Violets.

Furthermore, as there shal be occasion, let a vein be opened, and the body be purged, according to what the variety of circumstances shal require; as for example:

Take Cassia one ounce; Elect. Diacatholick. two drams; Fenel seed half a scruple; and with Sugar make a Bole. Or,

Take Elect. Diacatholick. half an ounce; Confect. Hamech one dram or two; Conserve of Borrage half a dram; Sugar a sufficient quantity, and make a Bole. Or,

Take the Roots of Succory, and Scorzonera or Vipers Grass of each three drams; Sorrel, Borrage, Bugloss, Fumitory, Harts-tongue, of each one pugil or smal handfull; of al the Cordial flowers two pugils; of the four greater cold seeds, and Fenel seed, of each half a dram; the Leaves of choice Sene half an ounce; Polypody of the Oak, and Mother of Thyme, of each two drams; Raisons cleansed half an ounce; boyl them in a sufficient quantity of cleer running Water; and in four ounces and half of the straining infuse one dram and half of Rheubarb, and half a dram of Cinnamom; unto the straining when it is pressed forth, add of the Syrup of Fumitory, and Borrage, of each half an ounce; and mingle them well together. Or,

Take the root of Succory, Monk, Rheubarb, Elecampane, of each half an ounce; Sorrel, Fumitory, Scabious, Bugloss, Maiden-hair, of each

one



one handfull; Flowers of Borrage and Bugloss, of each half a handfull; Liquorish thin sliced, and Raisins cleansed, of each six drams; boyl them in a sufficient quantity of spring Water; then take of the straining one quart, and infuse therein the Leaves of Sene, Polypody of the Oak, of each one ounce; the rind of black Hellebor half an ounce, Fenel seed and Anise seed, of each two drams; Citron one dram, Mother of Thyme (commonly known by the name of Epithymum) five drams, Cinnamon one dram; afterward let them boyl gently, then strain them, and sweeten all with Sugar, and of this let the Patient take (every or every other day) two or three ounces with the Broth of a Chicken. Or else there are other preparations and Purgations to be appointed, Of the Whey of Milk, Fumitory, Harts tongue, Maiden-hair, Borrage, Bugloss, Violets, Succory, Endive, Sorrel, Scabious, Thyme, Scordium or Water Germander, Liquorice, sharp Dock, called by some sour Sorrel, &c. Of Epithymum otherwise called wild Tyme, or Mother of Tyme, Polypody, the Leaves of Sene, black Hellebor, &c.

Now the Purgers and Preparers are often to be repeated; for to great and contumacious a Malady as this cannot be taken away by a Digestive or two, neither without frequent Purgations.

But there are likewise in the mean time Cordiall Medicaments to be made use of, and such as extinguish and abolish malignity; As,

Take Conserve of Bugloss, Borrage, Violets, Water Lillies, Roses, of each two drams; Leaves of Gold three or four (or more if there be occasion) Harts-horn prepared, the best Treacle four scruples, Syrup of Apples, or Borrage, as much as is sufficient; make an Electuary. Or,

Take Conserve of the Flowers of Borrage, Bugloss, and Roses, of each one dram and half; the Species Diarrhodon Abbatis, and the best Venice Treacle, of each two drams; and with the Syrup of Apples make an Electuary; of which let the Patient take every day in the morning the quantity of a Walnut, and twice or thrice besides every week.

So soon as the Patient hath taken his Electuary, let him presently be put into a Cestern filled with sweet Water; and let him sit herein for the space of one hour. But let the Bath be so temperate, that there be no sweat caused, either in the Bath, or after his going out of it. For if any sweat be excited, it is a sign that the Bath is hotter than it ought to be. There are many Physicians that forthwith send away the Patients unto the Natural and Mineral Waters. But in regard that they dry exceedingly, there oftentimes riseth thence more hurt then good; especially in the beginning of the Disease, while the heat and driness are at the highest. And there a Bath of sweet Water is far more commodious and safe, which

tempereth the driness, dissolveth the excrements, and loosneth the Skin. After Bathing, the body may be anointed over with this Medicament following, or such like;

Take the Juyc of Nighshade, and of Scabious, of each one ounce; the Root of the sharp Dock six drams, Vinegar of Roses one ounce, Elecampane root and Pimpernel, of each half an ounce; Oyl of Roses four ounces; the Rinds of black Hellebor tied up in a piece of skin, three drams; boyl them until the Juycs be boyled away, and after this cast away the black Hellebor, and then,

Take fresh Butter one ounce and half, Vipers fat, or if that cannot be had, the best Treacle one ounce, burnt Lead half an ounce, Liubarge and Ceruss, of each two drams; Frankincense a dram and half, Syrax Calamite and Nitre, of each two scruples; Mingle and stir them wel about together with the Juyc of Lemmons, in a Leaden Mortar with a Leaden Pestle, untill it hath gotten the form of a Liniment.

After bathing let him likewise use this Remedy, which some hold for a great secret: They burn in a new Pot the Head of a Kite, which after it is pulled and made bare of its Feathers, they cut off, as also the Feet and the Bowels being taken out; and of the Powder hereof they administer what they think requisite in a fit and convenient Liquor; and they prescribe likewise the eating of the rest of the Flesh at thrice, that is to say, a third part each day, for three daies together.

Solenander writeth that he himself made use of this following Remedy, and that with very good success. He taketh two or three Vipers or (if they cannot readily be gotten) other Snakes, and dissecteth them alive, and then together with good store of Barley he puts them into Water, and boyleth them until the Barley become soft. With this Barley, as also with the very Flesh it self of these Snakes he feeds many Pullets or Chickens, and gives them no other food; with the which after they have been for some few daies nourished they lose their Feathers, and within a short time they again get new ones; and afterward with this Flesh and Broths made of them he nourisheth the sick Person by little and little. And indeed this Remedy out of Vipers we find to be much used by the Ancients. For the body being first purged, in the spring time especially, they took Vipers and cutting off the Head and Tail (casting away the Skin) they gave the Flesh of these Vipers to be eaten by these Patients thus affected. But Julius Palmarius assureth us that Fernelius (although he made it a good part of his Study) yet he could not once in all his life time effect what he so much wished and so diligently studied for, to wit, the recovery and restoring of any by the use of Vipers. And by his advice likewise Palmarius himself administered these Vipers, and not only the flesh of them prepared

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prepared divers waies (thus and thus) but the very Treacle it self also that is made of them; and yet notwithstanding without any the least success. For although at the first in the beginning of this Disease, this kind of Remedy may seem to benefit much; yet notwithstanding at the length by it the Elephantiack poyson and virulency is thrust forth into the Skin, and all the symptoms so exasperated (as he writeth) that in the end the putridness being augmented, they are as it were torn in sunder Limb after Limb. But however in regard that the Ancients have so much commended the use of Vipers, and some likewise of our latter Physicians have extolled the use of them, we therefore in this particular advise you to consult experience.

The Ancients likewise for a Remedy used Castration or Gelding; and they tell us in their writings, that many have been recovered by this means: Which (as *Valescus de Taranta* conjectureth) therefore cometh to pass, because that the Leprosie proceeding from an overdriness, the body by the taking away the Stones becometh much moistened, being hereby much effeminated; and so by this means the humidity thereof is in great measure retained.

And that we may conclude this Discourse, the *Elephantiasis* alone (as *Palmarius* writeth) more than any other of those Diseases that are of long continuance seemeth to rejoyce it self as it were in the variety and interchange of Remedies. And there are in this affect (if in any other) certain cessations and intermissions (almost from all Remedies) oftentimes to be allowed unto the sick Person; and then the same Remedies are anew to be repaired, and new ones to be added; since that scarcely ever did any recover of this Disease, that placed the hope of his safety in one only Remedy, though it were never so generous and prevalent.

*Julius Palmarius* puts much confidence in Hydrarge, which as he writeth doth every whit as much in this case as the flesh of Vipers, or the Viperine Treacle, or the Iron Instrument, or the Fire. But in regard that it will take up too much of our time, and cost much pains here to acquaint you with all that we might touching this Subject; And in regard also that the same *Palmarius* in his Book of the *Elephantiasis* hath taken notice of many other such like Observations as touching this Disease; and that *Aetius* likewise, *Tetrab.* 4. *Serm.* 1. *Chap.* 121. &c. hath collected very many things concerning it; and that much also may be found in *Forestus* his *Rosa Anglica*, and in other Authors that have written upon this Subject; and lastly, in regard that *Schenkius* likewise in the sixth Book of his Observations hath collected many strange and rare things touching this *Elephantiasis*; in all these respects, I think it not amiss to refer the Reader unto those afore-said Authors, for his more full satisfaction. And

*Petrus Palmarius* likewise in his *Lapis Philosoph.* *Dogmatic.* *Chap.* 24. reciteth an History of a certain Leprous Woman, whom he Cured with *Aurum Potabile*, exuberated, and exalted upon a Sphere, as Chymists speak, and with the Antimony of *Alexander Suchbrenius*.

### Chap. 41. Of a flatulent or windy Tumor.

And thus have we now at length dispatched and finished the Explication of all those Tumors that have their original from the Humors; it now remaineth that in the next place we treat of those Tumors that arise from winds. For there are peculiar Tumors that have their original from flatulency, or a flatulent and windy spirit; which the Greeks call *Pneumatosis*, and *Empneumatosis*, and *Emphysemata*; but the Latines call them *Inflationes*. Now this flatulent Tumor (as *Galen* tells us, in his Book touching the course of Diet in acute Diseases, *Comment.* 4. *Text.* 21.) is generated after a twofold manner; to wit, By a flatulent Spirit collected in certain Cavities these Cavities being either exposed to the sense, or else such as are Contemplable by Reason. Now by Cavities contemplable by reason (as he explains himself in his second Book to *Glauco*, & *Chap.* 3.) he understandeth those very Pores of the similiary parts, and those little spaces that are interposed betwixt the said similiary parts:

#### The Causes.

The Proxime, i. e. the neereft and conjunct Cause of this Tumor is a Wind, or flatulent Spirit. Now this is generated (as *Galen* writeth in his third Book of the Causes of Symptoms, and *Chap.* 4.) from a heat weak and languishing. For as absolute Cold cannot possibly excite any Vapor, so on the other side, vehement heat discusseth the Vapor. That which supplieth matter unto these flatulencies, is a humor, thick, flegmatick, or melancholick. The same do both flatulent Meats and Drinks afford, as also a cold, moist, and cloudy Air, an idle and sedentary life, and the suppression of accustomed Evacuations. The thickness of the part likewise that will not permit the Vapors to breath forth maketh much for the accumulation and heaping up of Winds.

#### The Differences.

Now there are of these flatulent Tumors many Differences; and this especially in regard of the parts affected; whiles that sometimes these Winds are collected under Skin; and about the Membranes of the Mulcles; sometimes in the Membranes of the Bowels; sometimes in the very Cavities of the Bowels, viz. the Stomack, Womb, Abdomen, and Scrotum, or Gads.

Signs

*Signs Diagnostick.*

The flatulent Tumor is known by this; That the part is sometimes lifted up into a greater, and sometimes into a less height; and oftentimes likewise there is from the distension a pain excited; but yet notwithstanding there is no kind of heaviness felt and perceived in the parts; and unless the wind be shut up in some cavity, it doth very seldom continue long in one place, but wandereth up and down. If the Tumor may be pressed with the finger it leaveth no pit; but the Tumor either resisteth the touch of the finger, or else the wind passeth unto some other part; and if it be smote with the hand, it then sendeth forth a noise like that of a Drum; and by how much the cavity in the which the wind is contained is the greater, so much the greater is the noise or sound.

The *Emphysema* differeth from *Oedema*; because that the cause of *Oedema* doth alwaies stick in the pores, and the spaces of the parts that are contemptible by Reason; now what those parts are, you may understand by what we have said in the beginning of this Chapter. But the cause of *Emphysema* is often collected in some one certain Cavity. And albeit that same flatulent spirit be likewise sometimes dispersed through the straightest passages of the parts; yet notwithstanding (as we have told you) these *Oedema's* being pressed do leave a hole or pit behind them; but as for the *Emphysemata*, they are not hollowed into a pit; and the *Oedemata* likewise if they be touched by the hand make no noise at all, as do the *Emphysemata*.

*Prognosticks.*

1. Flatulent Tumors if they be small, and be not cherished by some pertinacious cause, they are then without danger.

2. If the flatulent Tumor be great, it then argueth a great debility of the hear, and an abundance of matter; and therefore it is more dangerous, because more contumacious and stubborn.

3. If the flatulent matter be detained in the Muscles, it is then hardly cured; in regard that the spirit is dispersed from the ambient Membranes into almost all the parts of the Muscle, as *Actius* writeth, *Tetrab. 4. Serm. 3. Chap. 2.*

*The Cure.*

The wind that distendeth the part is to be taken away, and mansured that it may not breed again, and flow unto the part; and the pain (if any there be) is to be mitigated and moderated. And therefore such a kind of Diet is to be ordained that maketh not for the generation of winds; and the matter out of which the wind is bred is to be evacuated; and the heat of the part that generateth the windiness is to be corroborated, and corrected, touching which we have already spoken

in the places that shall be presently alleadged.

Such things as are hot and dry discurt windiness; and of this sort are the seeds of Caraway, of Cummin, Anis, Fennel, Carrot, Millet or Hulse, Juniper Berries, and Bay-berries, Camomil, Dill, Rue, Calaminth, Marjoram; as for example;

Take Seeds of Caraway, Fennel, and Cummin, of each one ounce; Rue, Calamint, and Camomile flowers, of each one handfull and half; Millet seed three ounces; then make a little bag or two, which thoroughly moisten in warm Wine, and apply them by turns one after the other. Or,

Take of Rue, and Betony, of each one handfull; Parietary half a handfull; boyl them in Ley until they be soft, and bruse them; then add powder of Camomile flowers, and Bean Meal, of each two ounces; boyl them and make a Cataplasim. Or,

Take Oyl of Rue, and Camomile, of each one ounce; the distilled waters of Caraway, Fennel, Cinnamon, of each half a scruple; a little Wax; and make an Unguent.

Chap. 42. *Of Tumors proceeding from the solid parts falling down into, or resting upon some other parts, in general.*

There remaineth now to be spoken of the last kind of Tumors, which the solid and living parts excite. For these if out of their own proper place they fall down into another place, or else rest and lie thereon, they then elevate the parts incumbent, and more especially the skin; and so by this means they excite a Tumor or Swelling. But now, the Bones are those that principally do this. For these if in either their disjoyning they fall out of their proper places or seats, or if being broken they change their situation, they then lift up the part incumbent into a Tumor. But there is no need that we speak any thing in special, and particularly, touching these kind of Tumors. For like as they proceed from, and depend upon disjoynings, dislocations, and fractures, so they are by them well known; and these being cured, they vanish.

And hither likewise belongeth Gibbosity, touching which we have already spoken in our second Book of the Practice of Physick, Part 2. Chap. 21.

There is likewise mention made by Galen (in his Book of Tumors, Chap. 14, & 15. and 14. of the Method of Physick, Chap. 17.) of a peculiar sort of Tumors arising from the Bones, and this he calleth *Exostosis*, you may call it *Exossatio*, to wit, Eminencies and standings out of the Bones, and especially those of the Temple, and in other parts also: but as touching these, (in regard

referred unto *Nodi* and *Cornea*, Tumors above propounded, Chap. 38.) there is no need at all that we speak any thing further here in this place.

Furthermore, there are Tumors oftentimes excited by the soft parts moved out of their places, and falling down. And hither belongeth that kind of Tumors that the falling forth of the *Uvea* causeth, of which we have already treated in our first Book, Part 3. Sect. 1. Chap. 25. *Hernia* or Rupture of the Intestines, of which likewise above, in the third Book, Part 2. Sect. 1. Chap. 6. and the Umbilical or Navel *Hernia*, touching which also we have spoken sufficiently in the same place, Part 10 Chap. 2. And lastly, the Uterine procreancy, and *Hernia*; and of this we have spoken likewise before, in the fourth Book, Part 2. Sect. 2. Chap. 16, and 17.

There remain yet only two sorts of Tumors, having their original from the living parts; the one from the Arteries, the other from the Veins: of which the former is termed by the appellation of *Aneurysma*, and the latter by the name of *Varices*; which Tumors we shall speak unto and explain in the two following Chapters, and with them we will conclude and shut up this Tract of Tumors.

### Chap. 43. Of Aneurysma.

**A** *Neurysma*, which is so called, not from the Greek word *Neuron*, but from *Anaeuremein*, which is as much as to dilate above; which word the Latines likewise retain, being not provided of a better and more proper; (for as for those that the Arabian Interpreters make use of, such as *thete*, *Hyporisma*, *Emborisma*, *Emborismum*, *Aporisma*, they all of them have their original from the Greek word corrupted) that this *Aneurysma* (I say) is a Tumor arising from an Artery preternaturally affected, is a thing out of all doubt and controversy. For although the Author of the Medicin. Definitions saith that *Aneurysma* is a relaxation of a veiny little Vessel; yet notwithstanding, without all doubt the word *Venosum* is there taken for *Arteriosum* (that is to say, Veiny for Arterial) since that it is a thing generally well known, that the Ancients did oftentimes call the Arteries by the name of Veins.

But now what this *Aneurysma* is, and from what cause it ariseth, is a thing not altogether to manifest and evident. *Galen* indeed in his Book of Tumors, Chap. 11. writeth thus touching this *Aneurysma*: *But now* (saith he) *a mouth being made in an Artery, the Affect is called Aneurysma. Now this happeneth when the Artery being wounded, the skin that lieth neer unto it cometh unto a Cicatrice; but yet the Ulcer of the Artery still remaineth, the said skin being neither conglutinated, neither together brought unto a Cicatrice; neither filled up with flesh.* And the

same *Galen* in his fifth Book of the Method of Physick, Chap. 7. hath left this written: *Unless* (saith he) *flesh produced do first fill up the place that is neer about the Artery cut asunder, but that there still remaineth some void and vacant place, then verily there followeth that Tumor we call Aneurysma.* Other Greek Physicians there are that are of the same Judgment and Opinion with *Galen*. For thus *Aetius* writeth touching this *Aneurysma*, Tetrab. 4. Serm. 3. Chap. 16. *Aneurysma* happeneth in every part of the Body, but more frequently in the Throat; where it produceth that Tumor we call *Bronchocele*. It befalleth oftentimes unto Women in Child-bed, by reason of the violent detention and holding of their breath: but it happeneth likewise in the Head, nigh unto the places of the Arteries; and in the rest of the body also, where ever the Arteries are wounded: like as when ignorant and unexpert Physicians intending and attempting to open a Vein in the Arm, do withal prick, and oftentimes cut asunder the Artery lying underneath it. The very same is told us by *Paulus Aegineta*, in his fourth Book, and Chap. 53.

The same Opinion is borrowed from the Greeks by *Avicen* the Arabian, as appeareth by what he writeth in *Quart. quarti*, Tract. 2. Chap. 16. *And when the place of the Artery* (saith he) *is not from above coarctated and conjoynd close together, after the solution of its continuity, and that it findeth a voidness or vacuity, then the thing comes even to an Emborismus, which is named the Mother of Blood.* And a little after, thus he writeth: *And very many times* (saith he) *the Artery is not indeed covered over with flesh, but that which containeth the Artery is incarnated and covered with flesh, and is coarctated and closely conjoynd upon it. Wherefore the blood cannot have nor make any superfluous course; yea, something goeth out of it even unto the ends of the skin, which it receiveth and taketh in the quantity; and whensoever it is easily and gently pressed together, it returneth, and it's altogether bidden, like as we see it to happen in Ruptures.*

And this Opinion very many, and indeed most of the latter Physicians do follow. Yea, and *Platerus* himself likewise, who is otherwise wont to take liberty enough in examining the Opinions of the Ancients, writeth, That *Aneurysma* doth not only arise from the dilatation of the Artery (it yet remaining shut and entire) but also that more frequently (if not alwaies, if it be in the exterior parts) it proceedeth from a certain manifest and apparent opening thereof. For then the thin and i'prightful blood breaking forth of the Artery under the skin lifteth it up into a Tumor or Swelling, and there formeth and frameth unto it self a hollow nook, and there in the Artery causeth this pulsation in this Tumor; even almost in the same manner as the Arteries are wont to empty themselves naturally into the hollow



low nooks of the thick Membrane of the Brain; so here they do it preternaturally, by pouring forth the blood (with and in breathing) in its *Diastole*, and in its *Systole* receiving it in again.

But this is an Opinion that I could never approve of; and therefore in the year 1606. (when I interpreted *Galen's* little Book of Tumors) I altogether rejected it; and I then likewise propounded another, which out of those Lectures of mine, that noted and famous man Dr. *Bernhard* of Sweden made use of and Inserted likewise in his Treatise of the Inspection of Wounds. For if *Aneurysma* should proceed from the Effusion of the Arterial blood under the Skin; then certainly the said blood would diffuse and disperse itself, in length, and breadth, and round about; and would dye and colour the Skin of another Hieu; like as we see it to happen in Contusions, and in the opening of a Vein, when it is not exactly and rightly performed; to wit, when either the Vein is wholly cut through, or else when the Wound thereof by reason of the impetuoufness and violence of the Blood is not rightly cloted. For then the blood is very often poured forth under the Skin, even unto the extrem and utmost part of the Hand; and the Skin is dyed with a Red, Green, and Yellow colour. Which must necessarily happen somuch the more, if an Artery be opened; in regard that the Arterial blood is thinner, and floweth forth with a greater force & violence: which yet notwithstanding never happeneth in *Aneurysma*, in the which that Tumor is contained within its own Limits, and as it were in a Bladder; neither is the Skin dyed with any other color. And moreover if *Aneurysma* proceeded from a Blood poured forth under the Skin, in progress of time it would so happen that this Blood consisting and abiding in a strange and unfit place would putrefie like as we see it usually doth in *Eccchymoma*, as we told you before in the seventeenth Chapter.

*Antonius Saporita* indeed in his first Book of Preternatural Tumors, and Chap. 43. doth his endeavor to save and answer these objections, whiles he thus writeth; *The Blood* (saith he) *if it altogether leaveth its own proper Vessels, and cast it self forth into a greater Venter or Cavity, being left destitute of the influx of the beat that should flow in unto it, wil necessarily putrefie: but in Aneurysma* (which proceedeth from the opening of an Artery) *it is not so far forth left destitute by the beat thereof, and by the rest of the Blood that is contained therein, that its native beat and colour should perish; neither is it expelled forth into any great space or Venter, that it should corrupt and putrefie. For it is cherished by the vital spirits contained in the Artery, since that its matter remaineth yet entire and continued. For albeit the Artery be divided, and the Blood causing the Tumor doth pass forth; yet*

*notwithstanding the Flesh and the Skin that cover the Artery, continuing still whol and entire it doth not alwaies so insinuate it self into any large and ample space, that it should be made thereby to putrefie, and rendered destitute of the help and assistance of Nature. But the truth is, he doth not here by all that he alleadgeth acquit and free the Ancients from the aforesaid Objections. For if the Blood that is flown forth may be cherished by the vital Spirits and the heat of the Artery; why then is not the same done likewise when a Vein is smitten and pierced through, and when the Blood (the Vein being not as yet consolidated and exactly closed) issueth and floweth forth? Neither doth the Blood only then putrefie when it is poured forth into a large and sensible Cavity, but likewise whensoever it is shed forth under the Skin. Furthermore (as we have said) that Blood which we call Arterial is not poured forth round about, as the Vein Blood is; which yet notwithstanding it ought much rather to do, in regard that it is thinner, and more spiritul. For it is not sufficient (what *Platerus* writeth) that the Blood poured forth under the Skin doth there form and frame for it self a *Sinus* or hollow nook, not unlike the hollow spaces into which the Arteries in the thick Membrane of the Brain do insinuate themselves; and that the Skin is instead of an Artery unto that Blood that is poured forth out of the Artery; and that the Blood may from thence uninterruptedly repass, and flow back again into the Artery, without any Corruption. For the *Sinus's* are framed by Nature, and so exactly shut up with Membranes, that nothing at all can possibly flow forth of them. But now the Arterial blood can no manner of way frame for it self any such *Sinus*, but whensoever it falleth forth without the Artery it diffuseth it self every where round about; and in regard that under the Skin all things are confluid, therefore the Blood easily maketh an irruption into the adjacent parts by that way and passage that is opened; the which we may likewise see the Veiny Blood to do (which is much thicker) and then the said Blood being out of its own, and in a strange place, soon putrefieth. Which appeareth even from that very History that *Antonius Saporita* writeth, as conceiving it to make much for the confirmation of what he had written touching *Aneurysma*, in his first Book of preternatural Tumors, and Chap. 43. Neither in truth was that Disease which he there describeth an *Aneurysma*, but only an effusion of the Arterial Blood, upon the rupture of the Artery, into the places lying neer about it, and there corrupting. But this is the Story that he telleth us. *Whenas Johannes Fabri* that most acute and sedulous Scribe of the Palace at Montpelier had spent the chiefest part of his youth in riotous and inordinate Revellings and Feasting, and in a frequent and unseasonable Drinking of the*

strongest

strongest sort of Wines, without any diluting, or qualifying the heat thereof, he began about the fiftieth year of his age to draw his breath with much difficulty, and to be affected with an extreme troublesome palpitation and beating of his Heart. For the removal of this great Distemper there were many Remedies prescribed and administered, not only by my self, but likewise by the most expert Physicians of our University there. All which when they could not in the least prevail over this contumacious and head-strong Disease, by reason of the Patients continuing and persevering in his accustomed ill course of Diet, he grew the worse thereby; and after some few months were passed, in the which by the advice of the Physicians he took no Physick at all (for they were willing to commit unto Nature a part of the Cure of this Chronical Affect) he began to complain of that part that lieth under his left Shoulder-blade. The place of his grief being lookt upon, and thoroughly considered, there appeared unto me a notable Tumor, soft unto the touch, and attended with a beating; and when pressed down with the Fingers, it was then seemingly wholly hid and non-apparent; but these were no sooner taken off, but forthwith it returneth as before. In short, the Disease having gotten deep rooting, & being now become incurable, our Patient within a very short time after departed this life. But now that we might get the truth and certainty both of the nature and constitution of this Disease, as also of the Cause thereof, we dissected that part that was affected with the Tumor; out of which there issued forth great store of Blood, unsavory and stinking as it was; all which Blood being wholly evacuated and thoroughly cleansed, there appeared the prime and principle Artery under the Heart (having its original from the great Vein in its ascending up into the Head exceedingly dilated, and extremely torn. This Vein descending downward creepeth along through the Region of the Intercostal Muscles; the Blood that flowed forth of it being heaped up in the spaces of the Muscles, and in tract of time putrefying and corrupting, had so vitiated and marred the Vertebra and Rib of that place, that it seemed unto us altogether rotten and putrefied.

And therefore (say we) some other way and means of the generating of this Tumor is to be sought and found out.

The Author of the Book of the Medicin. Definitions defineth *Aneurysma* by the relaxation of an Artery. And so likewise *Fernelius* in the seventh Book of his Pathology, and Chap. 3. asserteth that *Aneurysma* is a dilatation of an Artery full of spiritul blood: but all this while they do not express the manner how this is done. Neither is it ever a whit credible that *Aneurysma* is caused by the dilating of both the Tunicles of the Artery, but only by the widening of one of them. For the Arteries have indeed a double Membrane, one ex-

ternal, which is slender, thin, and soft, having of straight Fibres very many, but of oblique ones very few, and of transverse ones none at all: the other internal, which is close, thick, and hard, having transverse Fibres, but wanting straight and oblique ones. And therefore if the Internal Tunicle be either broken by extension (as easily it may be in regard of its hardness) or else if it be opened by Section, it doth not easily Cement and close together again, because it is hard; but now the external Tunicle in regard of its softness doth easily and soon grow together again; and because it is so soft, and wanteth both oblique and transverse Fibres, it is thereupon extended by the Blood and the vital Spirit, seeking their passage forth in an imperious and violent manner; and so this kind of Tumor cometh to be excited; in the which the force and the impetuous violence of the blood and the vital spirit may be discovered by the very touch. Neither is that which *Platerus* objecteth of any weight or moment; to wit, when he tells us, that upon the alone bare Section that he saw made in the skin that covered over the Tumor, the blood forthwith at first hid it self, but then instantly sprang forth again; and this oftentimes, saith he, is in so great abundance, that it cannot by any one (use he what means he wil) be any more stanch'd; but that it issueth forth in greater abundance, insomuch that the whole stock of Blood being almost spent it hath oftentimes brought a sudden Death upon the sick Person. But indeed if we should determine that the *Aneurysma* proceedeth from the dilatation of these Tunicles of the Artery, this Objection would then carry some weight along with it. But in regard that (according to the truth of the matter) we have already asserted and determined that an *Aneurysma* ariseth from the dilatation of the exterior Tunicle alone of the Artery (the internal being opened either by Section, or by Rupture) we cannot therefore by any means grant, that the Arterial blood lieth hid under the whole Skin: but because the external Tunicle is extraordinarily extended, it cohereth and sticketh so close unto the Skin, that it is extended together with it, and is in a manner so become one therewith, that it is almost impossible to cut the Skin without cutting the external Tunicle of the Artery.

And so then the result of all that hath been said wil be this, to wit, That the proxime and highest cause of *Aneurysma* is, the opening of the interior Tunicle of the Artery, and the dilatation of the external. Now it is very frequently opened by Section, when unexpert Chirurgeons instead of a Vein open an Artery; or when at least together with the Vein they cut through the Artery that lieth under it. Now if this at any time happen, the external Tunicle in regard of its softness and neer alliance with the

The highest cause of Aneurysms.

Tunics of the Veins very easily and soon closeth together again; but the interior (by reason of its hardness) remaineth open; from whence through the patent and open place the Blood and vital Spirit endeavoreth to break forth, and by this means distendeth the external Tunicle, and causeth this kind of Tumor. The same may likewise happen if the internal Tunicle of the Artery be broken either by the violent and impetuous motion of the Arterial blood, or by any violent external cause, and the overgreat distension of the Artery; the external Tunicle (that is more apt for extension) being at this while safe and sound.

But now, Whether or no that pulsation of the Arteries, of which *Platerus* maketh mention in his Tract touching the palpitation of the Heart, (and touching which out of *Fernelius*, and *Ludovicus Mercatus*, we have already treated in the fourth Book of our Practice, Part 2. Sect. 3. Chap. 9.) may or ought properly to be referred unto *Aneurysma*, I very much doubt. For whereas the Membrane of either Artery is then whol and entire, it seemeth rather to be an Affect in the Veins, of kin to the swoln and distorted Veins that we call *Varices*, than this Tumor *Aneurysma*, of which we are now treating.

### Signs Diagnostick.

The *Aneurysma* is easily known and discerned from *Echymosis*, because that in *Aneurysma* the color is like unto the rest of the skin, and the Tumor is soft and loose, and for the most part giveth way and yieldeth unto the compression of the fingers, the blood running back into the Artery, from whence it instantly again floweth forth. There is likewise a Pulse to be felt in an *Aneurysma*. Although that *Parvus* hath observed, that sometimes in the *Aneurysma* (if it be great) there is neither any pulse to be perceived, nor any return of the blood (upon the compression) unto the more internal parts; and this I also observed myself in a certain Woman; but then notwithstanding there is to be perceived a motion, and as it were the loud noise of boiling water; and that not only when it is pressed down with the fingers, but likewise at other times; and this hissing or Irising noise is not only to be perceived upon the touch of the fingers, but also upon the putting of the Ear close thereto; which proceedeth from the motion of the vital spirit in its passage through streight and narrow places. All which signs proceed not from the effusion of the blood under the skin, but from the dilatation of the Artery.

### Prognosticks.

1. All *Aneurysma's* are very hard to cure.
2. Yet notwithstanding those of them that are less, and newly arisen, will admit of a Cure. But such of them as are old, and greater (in regard that that blood cannot be driven back by Astrin-

gents, neither may the Artery be consolidated; and so they are no waies to be cured but by Surgery) will hardly admit of any cure at all. For the Tumor being opened, and the Artery (as it is necessary) being cut, the Arterial blood floweth forth (together with the vital spirit) abundantly, as it were at once, and with great violence; so that the sick person is oftentimes precipitated into extreame hazard and danger of death. And there are many remarkable instances that might be given of such sick persons as in the opening of the *Aneurysma* have died under the hands of unskilful Chirurgeons.

3. Neither hath the Tumor that is joyned with an *Aneurysma* any great danger in it; but that the life may together with it be lengthened out for a long time. I knew a certain near Neighbor of mine, in whom an unskilful Chirurgeon when he should have opened a Vein, cut an Artery; and it is now already above thirty yeers that she hath had an *Aneurysma* as big as a Walnut in the inward bending of the Arm, and all this while hitherto she hath enjoyed (and still even at present doth) perfect health, as if she ailed nothing at all. And therefore we conclude that better it is sometimes for the Patient to bear and undergo this sleight inconvenience, than to submit himself unto a dangerous Cure.

### The Cure.

And therefore forthwith (even in the very first rise of it) so soon as ever we perceive that there is an *Aneurysma* excited, (for it is not suddenly done, but that dilatation of the exterior Tunicle of the Artery is caused sensibly and by degrees) let Astringents and Repellers be imposed upon the place affected, that so the force of the blood may be abated and qualified, and the open hole of the Artery may be shut up. For which end and purpose there may likewise very fitly be administered a thin Lead plate, which doth repel, thicken, and bind close together the loosened Artery. There may also be administered astringent Cataplasms, and the Emplaster against a Rupture. And because that the *Aneurysma* sometimes also ariseth from the cutting of an Artery, we must do our endeavor, that if an Artery be cut (whether it be purposely done, or whether it happeneth by any ill accident) that it may immediately shut and close up again, and that in a right manner: which in regard that it is not here so easily effected (because of the violent and impetuous motion of the Arterial blood) as it is in the Veins, therefore we prescribe the following Medicament as very fit and proper for the Consolidating of the Wound of the Artery.

Take of Frankincense two parts, of Aloes one part and an half; Mingle them; and having shaken them well together with the white of an Egg, eye up all with the Flex of a Hare as much as will suffice,



suffice, and let them be laid upon the Wound of the Artery.

And of this kind there are divers other Medicaments to be prepared, of the Roots of the greater Comfrey, Mastic, Frankincense, Pomegranate Rinds, Aracia, or binding Bean-tree, Hypocistis or the hardened juyce of Cyttus, Myrtle, Gals, Aloes, sealed Earth of Lemnos, Bole-armenick, Lapis Hematitius or the Blood-stone, and the Emplaster Dischalcitis.

It is this manner, and by these means the growth and encrease of the *Aneurysma* cannot be hindered; there are indeed some that advise and persuade us unto Section; and the Tumor being opened, the Artery that is to be cut must be inter-circled by binding it about with two bands; and then it must be dissected between the two bonds; and these bonds (as they teach us) are not to be loosened, until the Nature hath covered over the wound with flesh; and that now al the fear of the bloods issuing forth, and al the danger of an Hemorrhage be past and gone. Now as for the manner of cutting the *Aneurysma*, *Aegineta* acquaints us with it in his sixth Book of Physick, Chap. 37. in these words: If the Tumor (saith he) be caused by opening, then we use to inslit upon the skin a straight Section made longwaies; and then after this the lips of the skin being parted and far sundered by little hooks, we make bare the Artery, severing it from its Membranes by Instruments very fit for this purpose; and then after the trans-mission of a Needle under it, we tie it with two threds; and then so soon as we have pricked with a Pen-knife the middle part of the Artery, and have evacuated what was therein contained, we then betake our self unto the suppurative cure, until at length the ties of the threds fall off. But now if the dilatation be caused from the rupture of an Artery, then it becometh us (as far forth as possibly we can) to lay hold upon the whole with our fingers, together with the skin: then to cast through it (beneath that we have laid hold on with the fingers) a Needle, that may (if you please) have in it two threds, or rather one thred doubled: and after the casting through of the Needle and thred, we are then to cut in two the very bandle (as I may so call it) of the double thred, and so to bind about the Tumor (on this side, and on that) with the two threds. But if there be any cause to fear lest these threds should slip and fall, then in this case there is likewise another Needle to be cast through, that may throughout lie and press upon the former, and this Needle may likewise draw after it two threds, or a double thred; and the bandle thereof being cut in sunder we then bind about the Tumor with four threds, or else the Tumor being opened about the midst of it, after the emptying forth of what is therein contained, we cut off the skin, that bring-  
left remaining that was tied about; and then a long spleen-like Plaister well moistened in Wine

and Oyl being laid thereon, we conclude and perfect the Cure by Liniments. But who is he that seeth not, that this kind of Cure is not only cruel, and so cruel that few or none wil submit unto it; but that it hath likewise much danger in it, and yet for al that doth not heal the sick person? For although the Artery be bound about; yet notwithstanding after the threds are loosened there is cause to fear, lest that either an Hemorrhage follow, or else that a new *Aneurysma* be caused. And therefore the more secure and safe course is, only to bind hard, and press together the Tumor with Bands and Medicaments, that so it may not gain any further augmentation.

#### Chap. 44. Of the swoln Veins, called Varices.

**V**arix, with the Greeks *Kirsos* (this being the name given unto it by the Greek Physicians only, for we find Aristotle in the third Book of his History of living Creatures, Chap. 11. and 19. and Plutarch in the Life of Caius, calling it *Ixia*; as Galen in his tenth Book of the Method of Physick, and last Chap. defineth it; and as out of him Paulus Aegineta hath transcribed it in his sixth Book, Chap. 82. and Aetius, Tetrab. 4. Sect. 2. Chap. 48.) is the dilatation of a Vein; this said dilatation of a Vein being called *Varix*, as that before mentioned dilatation of an Artery was termed by the Greek Physicians *Aneurysma*; of which in the foregoing Chapter.

But now these *Varices* happen in divers parts of the body, but most frequently in the Thighs, and yet notwithstanding sometimes likewise in the Temples; as Paulus telleth us in the place before alleadged; and sometimes in the lowest part of the Belly, under the Navel; and oftentimes also about the Testicles, and the Gads; which said Tumor is (in special) called *Kirsocoele*.

#### The Causes.

They are generated from great store of Melancholly blood, which (as Galen writeth in his Book of black Choler, Chap. 4.) Nature oftentimes transmitteth unto those Veins that are in the Thighs, by the which being distended and dilated they are rendered *Varicose* or swoln up; and the skin that toucheth upon these kind of Veins in process of time becometh of a blackish color. But now as for such in whom there is only great store of blood flowing in that is not Melancholly; it resting indeed, and wholly relying upon those Veins which there in that place are naturally more weak than elsewhere, doth dilate them, but scarcely ever dye them of such a like color, as it happeneth when Melancholly blood shal produce these *Varices*. For such are in very great danger (if any one assay to cut forth the Veins affected) of be-  
ing

ing surpris'd with Melaucholly. For this is frequently seen to happen, not only in *Varices*, but even in the *Hæmorrhoids* also that consist of the same kind of humor, even as the coming of them upon those that are mad is wont to be a freeing and discharging of them from their madness; as *Hippocrat.* in the sixth of his Aphorisms, Aphor. 21. And yet notwithstanding, scarcely ever doth good blood (though it abound never so much) by its great plenty alone produce and cause *Varices*, as it doth if it be both plentiful, and withall if it be thick; which by its weight tenderth downward unto the Thighs. Whereupon it is also that the *Varices* have not their being until the ripeness of age; as *Hippocrates* in *Coac. prænot.* toward the end teacheth us; in regard that a thick and melancholly blood is not generated sooner in the Body. And likewise *Pliny* in his eleventh Book and Chap. 45. writeth that the *Varices* happen in the Thighs of Men only, and very rarely in Women. Such likewise as are bald, in these the *Varices* become not great: but for such as (while their baldness is upon them) are afflicted with these *Varices*, these come again to receive their Hair; *Hippocrat.* in the sixth of his Aphorisms, Aphor. 34. Which yet notwithstanding *Galen* asserteth to be a fallshood (in his Comment) unless haply any one will understand this of that affect that Physicians call *Madarosis*, that is, the shedding or falling off of the Hair. For this Affect since that it hath its original from vicious humors (as likewise the *Alopecia* hath, and also that we call *Opbiasis*) if those very depraved humors being translated into the Thighs do cause the *Varices*, the sick Persons may then possibly recover and receive their Hair again. For if at the first the loss of the Hair proceeded from vicious humors their corrupting and corroding the very roots of the Hair; then (questionless) these said humors taking now their course into some other place, the Hairs will again return unto their naturall State.

The more remote Causes are all those that make for the generating and breeding of thick and melancholly blood; and especially the Spleen when it is distempered maketh much unto, and helpeth forward the generation of these *Varices*. And that likewise which much furthereth the flowing of the aforesaid humors unto this part, may be compris'd under on of these Heads, to wit, either a blow, or streining overmuch, long and tedious foot journeys, extreame hard labor, and the like.

### Signs Diagnostick.

These *Varices* are easily known, whenas swelling Veins in the very superficies of the Members (and especially of the Thighs) appear unto the very sight it self; and the part affected appeareth either Leadn coloured or black; and the Tumor being pressed down seemingly retreateth back, but forthwith returneth again.

### Prognosticks.

1. These *Varices* of themselves carry little or no danger in them; neither bring they any unto the Party thus affected; but they rather preserve and free such as have them from other Diseases, especially Melancholly Diseases; touching which *Hippoc.* in the sixth of his Aphorisms Aphor. 21. thus writeth; *If Varices, or the Hæmorrhoids happen unto such as are mad, they are thereby freed of their madness; and the whole Body is by them thoroughly purged from all flatulent Blood.*

2. But if they be unseasonably taken away (as *Galen* in his Book of Venesection against *Erisistratus*, and Chap. 6. and in his Book of black Cholera, and Chap. 4. teacheth us) Madness, the Pleurisie, the pain of the Reins, the *Hæmorrhoid* Flux, the Cough, and spitting of Blood, the Apoplexy, Cachexy, Droptie, and other Diseases arise.

3. Sometimes these *Varices* do pass into the *Elephantia* of the *Arabians*, touching which we shall speak further in the next following Chapter.

### The Cure.

Unless therefore the *Varices* be of the biggest size, and that the Veins and the Skin by reason of their extension be so extenuated that there be great cause to fear a Rupture, a profusion of blood, and Dearth it self; and again unless they be inflamed, and extremely painful; or that there be present some great and malignant Ulcer; they are by no means to be healed, lest that these being removed, some more grievous Evils befall: Since that those things only may be said to heal that do altogether free the Party; and not those things that generate another Affect more dangerous then the former; as *Galen* teacheth us, in the sixth of his Aphorisms, Aphor. 26.

And therefore if it like you to Cure these *Varices*, this ought to be done with great Caution; there must be some of the blood let forth; the Body must then be purged, and that not only once, but twice or thrice; and whatsoever is amiss in the Liver and the Spleen (if they be ill affected, and administer cause unto the *Varices*) is first of all to be corrected. And afterward we are to make use of Astringent, Drying, and Digestive Medicaments; as also of Swath-bands, and Ligatures, that may thrust forth the blood from the inferior parts unto the superior.

These things if they profit not, but prove successful, the Ancients were then wont to betake themselves unto Section or Cutting. *Oppius* is our Author (as *Pliny* relateth it in his eleventh Book, and Chap. 45,) that *Caius Marius* (who had been seven times Consul) was the one man that standing suffered these *Varices* to be taken out of him; the one man (saith he) I call him, because

cause that as he was the first, so he was the only man in those times. But after him there were others also that suffered the same to be done unto them standing, and even without any bonds. For so Cicero tells us in the second Book of his Tusculane Questions, towards the end thereof. But in good truth (saith he) Caius Marius, a Country-man (but yet a man every inch of him) when he was cut of the Varices, at the very first forbid them to bind him: Neither before Marius was there ever any heard of that was cut without being bound. Why therefore were others afterwards? His Authority and Example caused it so to be. Seest thou not therefore that the Evil of this Affliction was more in Opinion, then it was really, and in Nature. And yet notwithstanding that this Affliction was not without its sharp biting pain, the same Marius sheweth: for he yielded up only one Thigh (whereas they were both of them affected) to be cut, and not his other Thigh that ailed altogether as much; so that he as a resolved man was contented to suffer pain, but then as a Rational Man he refused to undergo a greater pain then there was necessary Cause for: the whole of what thou art taught by his Example consists in this, viz. that thou carry a Commanding power over thy self. And of the same thing Plutarch writeth in the life of Caius Marius: He may be for an example unto us (saith Plutarch) in that when he was diseased in both his Thighs, and having them both full of these Varices, and bearing the deformity of them with a very ill will, he took unto him a Physician for the curing of one Thigh only; in the cutting whereof he did not so much as blinch, or once stir his body, neither was he heard so much as once to sigh; but when in silence, and with fixed Eyes he had rendred himself to be cut, he was not at all affraid (during the time this cutting took up) to suffer and undergo certain intervals of pain, caused by pauses and delays. But yet he would not in the least consent unto the Physician requiring him to render & yield up his other thigh to be cured; but thus he said, I know wel that the Remedy can no waies countervail these so great pains. And haply these are those things, of which Seneca in his eleventh Book, Epist. 79. saith; He, that whilst he was suffering those Varices to be cut forth continued all the while reading of a Book. But yet at this day there is hardly any one that wil admit of this Remedy, for the removal of that deformity that is caused by these Varices. As for the manner of cutting them out, Paulus Aegineta in his Book 6. Chap. 82. teacheth us how it ought to be performed. The man being washed (saith he) and a string tied about on the upper part of his Thigh, we command him then to walk; and then when the Vein is filled full, with writing ink or with a Colliry we mark it, according to its situation, the length of three fingers, or somewhat more; the man being then laid upon his back with his Thighs extended, we then bind

about another String above the Knee, and by this means the Vein being elevated into a considerable height, we cut with a Penknife in that very place which we marked, no deeper then only through the Skin, that some may by no means divide the Vein; and then the Lips of the Section being distended with little books, and the Membranes being excoriated and fleyed off by those crooked Penknives that are provided in Watery Ruptures, and the Vein being altogether made bare and naked, and laid open to the view on all sides, we then loosen the Thighbands; and the Vessel being elevated by a little book, we cast under it a Needle drawing along in it a double Thread, and cut in two the nook of the Thread; and then (the Vein being divided in the midst by a Venesection Penknife) we evacuate and let forth as much of the blood as is needful: then after this, with one of the threads we tie close together the upper part of the Vessel, and the Thigh being extended straight forth, by the expression or hard pressing of the Hands we empty forth that blood that is in the Thigh: and afterwards we again beneath tie the vessel close together; or we cut off and take quite away that part of the Vein that lieth between the bonds, or otherwise we permit it to remain, until that at length together with the bonds it fall out of its own accord: & then putting in dry Liniments, and a long spleen-like Emplaster after it hath been thoroughly moistened in Wine & Oyl being laid thereupon, we bind it down close; and so we cure it by the continued course of suppurating Medicaments, that are to be administered and applied in the nature, and after the manner of Liniments. Neither am I ignorant, that some of the Ancients used none of these bonds and Ligatures; for some of them presently cut forth the Vessel so soon as ever they had made it naked and bare; and certain others of them with violence draw forth and break off the said Vessel, so soon as they have extended it from the bottom. But the truth is, that before mentioned way of Manual operation is absolutely the best, and of all other the most secure. Moreover, as for the Varices that consist in the bottom of the Belly, we handle them in like manner; as likewise those that consist in the Temples. Thus far Aegineta.

Cornel. Celsus in his seventh Book and Chap. 31. telleth us of a twofold manner and Method of curing these Varices by Chirurgery, when he thus writeth; Every Vein (saith he) that is hurtful either withereth and wasteth away upon its being burnt, or else it is cut forth with the hand. If it be straight, or if though it be transverse, yet notwithstanding if it be simple; or else thirdly, if it be not overgreat, it is the better burnt. If it be crooked, and be as it were implicated into certain Orbs, so that many of them are as it were involved, and folded one within the other, it is then more convenient to take them forth. The manner of burning is this. The Skin having first an incision



incision made upon it, then the discovered Vein is to be a little pressed with a thin and blunt piece of Iron heated red hot; and great care must be had lest that the sides of the orifice it self be burnt, which to draw back again with small hooks will be no very hard matter. This is to be done by interposing welnigh four fingers in a rank throughout the whole Varix; and then there is to be impoted thereon such a Medicament whereby those things that are burnt may be healed. But then it is to be cut forth after this manner. The Skin (like as before) having an incision made in it upon the Vein, the orifice is to be kept open with a little hook, and with a penknife the Vein is to be drawn a little and loosened from the body; and here great care must be taken lest that in the doing of what went before the Vein it self receive any hurt; and under it a blunted hook is to be cast, and there being interposed almost the same distance as we shewed you above, in the same Vein there is the very same thing to be done as abovesaid; which said Vein whither it tendeth, is easily known by the extended hook. And so soon as the same hath been done wheresoever the Varices are, the Vein being brought unto some one place by the hook it there to be cut off; and then after this, in that place where the little hook is next unto it, it is there to be drawn forth, and there again it is to be cut off. And so the Thigh being on all sides freed from the Varices, then the mouths and orifices of the incisions are to be united, and strictly closed together, and upon the same there is to be imposed a conglutinating Emplaster.

*Avicen* (Book 3. Fen. 17. Tr. 1. Chap. 18.) cutteth the Skin until the Varix appeareth, and this he doth indeed longwaies, and not either obliquely or transversely: and then he extracteth and draweth forth all the blood that is in it; and then he cleanseth it by cutting it in length. But sometimes (as he writeth) it is to be drawn forth with a Needle, and so to be cur. He addeth moreover, that a drawing of it out with a Cautey is better than the cutting of it forth.

But in regard that the Cure of Varices by excision or cutting forth is not only rough and very difficult, but also because that for the most part it is not attended with an happy success, by reason of the flux and effusion of blood that hindereth the operation; therefore *Hieronymus Fabricius ab Aquapendente*, in his Treatise of Chirurgical Operations, teacheth us how we may cure these Varices in another manner, that is far better, to wit, without the extraction and drawing them out; on this wise. Since that there are (saith he) three things to be considered that concur unto the constituting of Varices, viz. The Blood that floweth, The Flux thereof, And the Dilatation of the Vein; therefore there are three things likewise that are shewn and pointed out hereby; to wit, That the flowing Blood is to be intercepted,

That which is already flown in to be evacuated, And the widened Vein to be streightened and made narrower. For the intercepting of the course of the blood, in the beginning and the end of the Varix, we ought to cast a bond and tie upon it; which is done either by that we call *Sella recurvata*, or by a Hook, or by laying hold upon the vein with the top of two fingers, and lifting it up thereby, and then transmitting a needle drawing a thread along with it through the lower part of the vein, and there tied together: upon which part the skin is to be cut, that so the vein may appear, and may be tied; and it is not to be cut when it hangeth forth unto the external part. We might likewise administer the same means, and use the very same way to intercept the blood, that Farriers use in intercepting the blood in Horses, that is, to press the Vein close together with a little thin Iron Plate fastened unto the Vein with a pair of Tongers. But then for the Evacuation of the blood that hath already flown in, *Hippocrates* in his Book of Ulcers, about the end thereof, teacheth us how and in what manner this is to be done. In the place already be given in charge, that the Varicose or swollen vein be not cut with any great and wide gash lest that thereby a great Ulcer be caused, by reason of the influx of the Varix; but rather (as *Hippocrates* saith) the Varix it self is again and again to be pricked whensoever we have any opportunity, and shall find it to be fit; from which said prickings the blood that hath already flown in, and filleth the swollen Vein, is evacuated and emptied forth; and this is done by degrees, and by little and little; and not all at once, and on a buddle as it were, and with much danger unto the Patient. But however, it is evacuated, if not wholly, yet at least so much thereof (even to the greater part of it) that the vein may without likewise sink and fall down in some one part or other. This being accomplished, we come then unto the third and last scope, that is, the striction and streightening of the dilated and over widened vein. For my own part I am wont to make up a Medicament of *Tragacanth* macerated in the Wine of *Pomegranates*, or the juyce of unripe Grapes; and then after this, I add the Powder of *Bole-armenick*, *Mastick*, and *Dragons blood*, in equal portions, until the *Tragacanth* being melted or softened become as thick as Wax, so that in the hollow of the Hand they may be reduced unto the shape and form of a Candle: which being done, I put the Medicament longwaies upon the Varices, and above upon it the rind of a Reed, that by its Cavity may answer unto the Convexity of the Medicament, and that may the better keep down the Medicament: it is to be laid on in the length of it, and to be tied about the Thigh with bonds, or else with a narrow Swaibband: for so both by this compression of the Swaibband, as also by the striction of the Reed, and

and the Medicament, the Varices have been oftentimes so streightened and close bound, that they have seem'd even to consume and wither away. I have now and then likewise made use of the condensed Juicy of Hypocistis or the excrescence of the Plant Cystus. And lastly, I have sometimes made use of a more mild and yet more gentle kind of Chirurgery, and especially when the Varix hath been but smal and inconsiderable. For laying aside the Ligaments, and the compunctions or prickings of Hippocrates, I made use only of the Medicament before mentioned, according to the length of the Varix, and binding it down with a part of the Reed tied fast thereupon; or else a Sponge somewhat long and twisted, and of the thickness of the Varix, bound about with a thread, and moistened in the juicy of Pomegranates, or of Hypocistis, and then rightly tied and bound on with a narrow Swathband: and for this purpose very beneficial likewise are the unripe fruits of the Wood Guajacum wel bruised, and imposed; all which by their astringtion do intercept the blood, and bind the veins together, and by their much drying they likewise evacuate. And lastly, for preservation of the part, I made use of a hose or buskin made of a dogs skin, which was to be put on, and exactly fastened on about the Thigh. Thus Fabricius.

Gulielmus Fabricius, in his fourth Cent. Observ. 85. relateth a History; as also the Cure of a monstrous Varix. The story is this: There was (saith he) a certain extraordinary strong man who had in his left Leg a malignant and inveterate great Ulcer, together with a Varix of a vast magnitude. For in thickness it was equal unto that part of the Arm that is next unto the Wrist; and it was welnigh a span long. Now it began in the very Ham, and descending toward the Foot it made a Ring, and two Circumvolutions. But that which was here worthy of observation, was this, That so soon as ever the man lift up his Leg any thing high, forthwith the blood drew back; and no sooner did he put it again upon the ground, but it again descended, and that in an instant and moment. And (in short) the blood did ebb and flow no otherwise than as if it had out of some narrow pipe been cast forth sometimes into this, and sometimes into that part. As for the Cure, he thus proceeded in it: Having appointed unto the Patient a fit course of Diet, and several times likewise purged his body, and having also opened a Vein in the Arm of the same side, he placed the sick person upon a Bench, and then in the very Ham he gently separated the Skin from the Vein it self. Then with a thread twice doubled, and put into the Eye of a crooked Needle, he woond about the Varix; and in the lower part of the Varix he proceeded in the very same manner. But before he tied the thread, and made fast the knot, he caused his Leg to be taken off the Bench and set upon the ground; and

this he did, to the end that the blood (according to its custom) might flow downward. At length he first of all tied the thread hard in the upper part of the Varix, and then he fastened it with a knot; thus he did afterward likewise in the lower part. This being done, with a Penknife he maketh an incision in the almost uppermost part of the Varix, that so the blood that was contained in the Varix, as in a long and little bag, might the better flow unto it. But when the flux of blood proved to be greater than what was proportionable unto the greatness of the Varix, and that he attentively and exactly viewed the place, there was found a blind passage, which from out of the lower part of the Ligature entered into the Varix. This passage whenas it could not be tied with a thread, he first applied unto the entrance thereof some of the Escharotick Unguent; and after that he applied in great abundance his own Pouder together with the white of an Egg, for the stanching of the blood flowing from it; and al these things he bound fast on with a Swathband thoroughly moistened and wet in Oxycrate; and thus he left it even until the day following. At length he cured the Wounds that himself had made, after the manner of others. And so this man (by Gods gracious assistance) became perfectly whol and sound.

### Chap. 45. Of the Elephantiasis of the Arabians.

**W**Hat kind of Affect *Elephantiasis* and *Elephantia* of the Greeks is, as likewise *Lepra* of the Arabians, we have told you before in the 43. Chapter; to wit, that it is a malignant Tumor of the whol body, and as it were an universal Cancer. And of that Tumor *Avicenna*, in his third Book, Fen. 3. Tract. 3. Chap. 1. And *Rhazes*, in his sixth Book to *Almansor*, and Chap. 35. have discoursed at large.

But as for the *Elephantia* (of which the Greeks speak not one word) the Arabian Physitians make frequent mention thereof, as being neerly allied unto the aforesaid *Varices*, and having its original from them, and being only a Tumor of the Feet. Of this *Elephantia* *Avicenna* treateth in his third Book, Fen. 22. Tract. 1. Chap. 18. where he likewise handleth *Varices*; *Rhazes* in his ninth Book to *Almansor*, Chap. 93. Yet notwithstanding *Haly Abbas* dissenteth from these, and followeth the Greek Physitians, in the eighth Book of his Theoric. Chap. 15. and in the fourth Book of his Practice, Chap. 3. Which last saith that *Elephan* is a disease corrupting al the Members of the Body, and as it were an universal Cancer. But neither do we find this Author alwaies in one and the same opinion; for in the eighth of his Theoric. Chap. 18. we have

*Elephantia*  
of the Ara-  
bians.

him writing thus: *Those Ulcers (saith he) that arise in the Feet, and in the Thigh, are called Elephas. And the Elephantick Disease is a melancholly Apostem, that appeareth in the Thighs, and in the Feet; and the sign thereof is this, that the shape and figure of the Foot is like unto, and much resembleth the figure of an Elephants foot.* All the rest of them treat of *Lepra* and *Elephantia* apart and severally; and they say that *Elephantia* is a Tumor of the Feet, arising from melancholly and stegmy blood, and from *Varices*; by reason of which blood the feet of the sick person are in their figure and thicknes very like unto the Feet of an Elephant. And this kind of Tumor is oftentimes to be seen in the highway Beggars, that get their livelyhood by asking relief in those publick and common places.

### Signs.

The Affect it self is manifest enough; whenas the Thighs of the sick persons are tumid and much swoln, very red, and sometimes wan and leaden colored, and oftentimes black, and for the most part full and abounding with Ulcers.

### Prognosticks.

But it is very rarely cured, not only because such as are herewith affected are for the most part of the meaner sort and condition, and therefore are not able to allow themselves Physick; but also because that from all parts of the body there are abundance of Humors thrust forth thither, viz. unto the Feet.

### The Cure.

And therefore there is no Cure at all to be hoped for, unless those vitious humors be oftentimes evacuated and emptied forth of the body; and the vitious dispositions of the Bowels (from whence there is a copious supply of those naughty and corrupt humors) be corrected; and as *Avicen* in the place alleadged writeth, The whole sum and substance of the Cure consisteth in the continuing and perpetuating of the cure, until it be perfected. Which, how and by what means it may and ought to be accomplished, we have hitherto oftentimes declared unto you.

And now when this is done, the growth and increase of the Tumor is to be prevented by astringent and drying Medicaments; and that which is already in being ought to be dissolved by strong Resolvers.

But if the Malady hath been of long continuance, and be now confirmed, there is scarcely any the least hope of recovery left; of which see further in *Rhases* his ninth Book to *Almansor*, Chap. 93.

The Tumor  
of the Hands.

*Antonius Saporta* in his fourth Book of Preternatural Tumors, and Chap. 25. applieth all whatsoever the Mauritanians assert touching

this *Elephantia*, unto a certain Tumor of the Hands; but this he doth much besides their minds. For when the Mauritanians speak of this *Elephantia*, they do not so much as make any the least mention of the Hands, but only of the Feet. And yet in the mean time it is not to be denied (which I have sometimes observed, and in the second Book of our Practice, Part 1. Chap. 25. given the Reader notice thereof; although I have not as yet met with any Author that maketh any mention in special of this Tumor) that oftentimes also the Hands (the rest of the body being sound and well) do so swell up; & that being pressed down by the fingers, in the manner of the *Oedema*, they leave a pit or dent behind them. Which Malady without all doubt hath its original from humors cold and thick. And unless it be timely and in the very first rise of it met withal, and presently cured, it is very rare that it afterward admitteth of any Cure; in regard that the sick persons refuse for the most part universal evacuations of the body, without which this Malady is not to be removed, and will not away with the tediousness of a long Cure.

Universal Evacuations of the body having gone before, and the Bowels in which the vitious humors are generated having been first strengthened; then afterwards the stronger sort of dicussers are to be administered, viz. Such as are made of Camomile, Flowerdeluce Root, round Aristolochy or Birthwort, Wallflowers, Ammoniack, Bdellium, Opopanax, and the like.

### Chap. 46. Of Particular Tumors.

There is likewise by Physicians frequent mention made of other Tumors; but they are such as either may be referred unto those Tumors that have been already hitherto treated of by us; or else they have been spoken of and explained among the particular Affects of Mans body; so that it will be altogether needless here to add any thing more in special unto what hath already been said of them in general. We treated of the Tumors of the Brain; in the first Book of our Practice, Part 1. Chap. 28. Of the *Fungi* of the Brain, *ibid.* chap. 26. Of *Hydrocephalus*, *ibid.* chap. 29. Of the Tumors of the Eyelids, *ibid.* Part 3. sect. 2. chap. 2, 3, 4, 5. Of the Ophthalmia, *ibid.* chap. 12. & 13. of *Unguis Oculi*, i. e. the Nail or web of the Eye, *ibid.* chap. 14. of the adnate Tunicle, *ibid.* chap. 17. of the Cancer of the Cornea Tunicle, *ibid.* chap. 19. of Suggillatio of the Eyes, *ibid.* chap. 22. of Encanthia, *ibid.* chap. 31. of the Inflammation of the Ears, *ibid.* part 3. sect. 3. chap. 2. of the Cancer of the Nostrils, *ibid.* sect. 4. chap. 2. of Polypus, *ibid.* chap. 3. of the Tumors of the Lips, in the second Book of our Practice, part 1. chap. 1, & 2. of the Tumors of the Gums, *ibid.* chap. 10. of the Inflammation of the



the Mouth, *ibid.* chap. 18. of the Inflammation of the Weland, *ibid.* chap. 21. of the Inflammation of the Tonsils, *ibid.* chap. 22. of Angina, *i.e.* the Quinsie, *ibid.* chap. 24. of Strumæ in the Neck, and the Dropsie in the Throat, *ibid.* chap. 25. of the Inflammation of the Lungs, *ibid.* Part 2. chap. 3. of the Tubercles of the Lungs, *ibid.* chap. 9. of the Inflammation of the Midriff, *ibid.* chap. 13. of the Tumors of the Diaphragm, *ibid.* chap. 14. of the Pleuresie, *ibid.* chap. 16. of Gibbosity, *ibid.* chap. 12. of the Inflammation of the Stomack, Book 3. Part 1. chap. 12. of the cold Tumors of the Stomack, *ibid.* chap. 13. of the Inflammation of the Intestines, *ibid.* Part 2. Sect. 1. chap. 2. of the Tumors of the straight Gut, and in special of the Hemorrhoids, *Condylomata* (swellings in the Fundament so called) Thymi and Ficus, *ibid.* chap. 10. of the Inflammation of the Mesentery, *ibid.* Part 3. chap. 4. of the Tumors of the Cawl or Kel, *ibid.* chap. 7. & 8. of the Inflammation of the Spleen, *ibid.* chap. 5. of the Scirrhus of the Spleen, *ibid.* chap. 6. of the Inflammation of the Liver, Book 3. Sect. 1. chap. 4. of the Scirrhus of the Liver, *ib.* chap. 5. of the Dropsie Ascites, *ibid.* Part 6. Sect. 2. chap. 3. of the Inflammation and Tumors of the Reins, *ibid.* Part 7. Sect. 1. chap. 8. & 9. of the Inflammation of the Bladder, *ibid.* Part 8. Sect. 1. chap. 4. of the Tubercles in the Urinary passage, *ibid.* chap. 9. of the Tumors of the Testicles, *ibid.* Part 3. Sect. 1. chap. 3. of the Rupture and Tumors in the Scrotum or Cods, *ibid.* chap. 7. of the Tubercles & Warts of the Yard, *ibid.* chap. 9. of the Inflammation of the Navel, *ibid.* Part 10. chap. 3. of the Inflammation of the Muscles of the Abdomen, *ib.* chap. 9. of the Pustules of Womens Privities, Book 4. Part 1. Sect. 1. chap. 4. of the *Condylomata* of the Womb, *ibid.* chap. 5. of the Warts of Womens Privities, *ibid.* chap. 6. of the Cancer of the Womb, *ibid.* chap. 11. of the Dropsie of the Womb, *ibid.* Sect. 2. chap. 11. of the Tumor of the Womb from Blood, *ibid.* chap. 12. of the Inflammation of the Womb, *ibid.* chap. 13. of the Scirrhus and Cancer of the Womb, *ibid.* chap. 14. of the Tumors of the Testicles in Women, *ibid.* chap. 20. of Crusta Lactea, Achores, and Favi, Tract. of the Diseases of Infants, Part 2. chap. 3. of Tinea, *ibid.* chap. 5. of Hydrocephalus, *ibid.* chap. 6. of Siriasis, *ibid.* chap. 7. of Aphæ, *ibid.* chap. 13.

Touching the flatulent Tumors, we have likewise (in special) treated of them in our former Books: to wit, of the Inflation of the Eye-lids, in the first Book of our Pract. Part 3. Sect. 2. chap. 2. of the Inflation of the Stomack, Book 3. Part 1. Sect. 1. chap. 11. of the Colick pain, *ibid.* Part 2. Sect. 2. chap. 4. of the Inflation of the Spleen, *ibid.* Part 4. chap. 4. of the Inflation of the Liver, *ibid.* Part 6. Sect. 1. chap. 3. of the Tympany, *ibid.* Part 6. Sect. 2. chap. 4. of the windy Rupture, *ibid.* Part 9. Sect. 1. chap. 7. of Strychni-

alis and Priapismus, *ibid.* Sect. 2. chap. 3. of the Inflation of the Womb, Book 4. chap. 10. of the Inflation of the Head, Tract of Infants Diseases, Part 2. chap. 6.

Touching those Tumors that arise from the soft parts when they are removed out of their own proper places, we have likewise spoken of them, in special; and first of all, of the falling down of the *Uvula*, in the first Book, Part 3. Sect. 2. Chap. 25. of the *Hernia* of the Intestines, Book 3. Part 2. Sect. 1. Ch. 6. of the Umbilical *Hernia*, *ibid.* p. 10. Ch. 2. of the falling forth of the Womb, and the Uterine *Hernia*, B. 4. Part 1. Sect. 2. Chap. 16. and 17.

And moreover as touching the Scorbutick Atrophy, we have written sufficiently thereof in its proper place. But now whereas we have in the general spoken of the augmentation of magnitude in the whole body, and in general (above Chap. 4.) those things therefore which may in general be further spoken of the Atrophy, we think it not amiss to subjoyn them here in this place.

When the Body is not nourished so much as it ought to be, but is diminished and lessened by reason of the denying of food unto it, this may indeed in the general be called an Atrophy. But yet notwithstanding the peculiar Species of an Atrophy have likewise their peculiar names. That which proceedeth from the Ulcer of the Lungs is properly called *Phthisis* and *Tubercles*: that that is from an Heetick Fever is named *Marasmus*, and *Marcor*. And that which happeneth without these causes, is called in general, an *extenuation of the Body*. We here in this place use the word Atrophy in a general signification; and under it we will comprehend all and every preternatural Extenuation of the Body, by reason of the defect of Nutriment.

But now an Atrophy is twofold; the first is of the whole Body; the other of some one particular part, as of the Arm, the Foot, &c. The Atrophy of the whole (in general so taken) is a preternatural extenuation of the whole Body, by reason of its being frustrated of its food, and its being denied its due and requisite Nutrition.

### The Causes.

As touching the Causes of an Atrophy, this in the first place is to be taken notice of, viz. that the Cause that invadeth the whole body is either in its own quality and disposition according to Nature, or else it is preternatural. And then likewise that which is Natural, or according to Nature, is the *Marasmus* (as we call it) in old age, and in aged Persons. For there was never yet that living Creature born, or brought forth, that was not obnoxious to old age, and which in old

age did not wither and consume away. But since that this Atrophy cannot by any Art whatsoever be prevented; we wil therefore in this place speak only of that Atrophy which happeneth preternaturally unto some Bodies alone, and not unto all in general.

1.  
By reason  
of the Nu-  
triment.

But now, whereas there are two things that concur and are necessary unto Nutrition, to wit, Nutriment, and the nourishing faculty; in both these likewise the Cause of Nutrition diminished (and consequently of an Atrophy) is to be sought after. In regard of the Aliment, the body consumeth and wasteth away, by reason of its either defect, or vicious quality, which we may call its pravity. For if there be not dayly as much of this Aliment again taken into the body, as is every day insensibly dissipated, then the body wasteth. But if there be indeed a sufficient store and stock of blood treasured up in the Veins; yet notwithstanding this is vicious and naught: and either it is not at all attracted by the parts; or if it be attracted, yet can it not be assimilated. The body is extenuated and pineth away, in the defect and want of Food and Nutriment, when in place of that Substance that is dayly wasted and diffused by an insensible transpiration, and exhalation, there is no other Nutriment, or at least not a sufficient store thereof, substituted and supplied. Now whereas the blood is the proxime and highest Nutriment of the whole body; there the Nutrition is especially hurt through the defect and failing of the blood. Now the blood faileth (first of all) in regard of some default and error in the first Concoction; when there is not a sufficient quantity of Chyle (from whence the blood ought to have its original) generated and bred in the Stomack: and this may happen unto such as are sound and in perfect health, by reason of a dayly and continued scarceness of Food, and their frequent spare Diet; but it happeneth in such as are sick and unheathy, when by reason of the want of appetite (it being now much dejected and weakened) they are averse from all kind of Food, and refuse to make any; or else when by reason of their Disease they are fed with but little Food, and that likewise not much nourishing. Which may also happen, if the Food that is taken in be presently sent and driven down into the Guts (either Crude or Raw, or else turn'd into Chyle) and so is by the Belly ejected, without its ever coming unto the Liver. The same may likewise happen if (by reason of any Disease whatsoever in the Stomack, its Concoction being thereby much weakened) the Chyle that is generated be either but little in quantity, or (that which is as bad or worse) imperfect and not sufficiently elaborated. Moreover Nutrition may be hindered because of the hurt of the sanguifying faculty, to wit, when by reason of something amiss in the Liver or Spleen, the blood that is generated is im-

pure, and not good: and this cometh to pass in the *Cachexy*, *Leucophlegmatia*, *Tympany*, the *Dropsie Ascites*, the *Scorbutick atrophy*, and the long lasting *Scabbiness*. Now as for the Causes of Sanguification, they have been already (in the third Book of our Pract.) mentioned and explained. From whence it happeneth, that albeit there be a sufficient quantity of Food taken into the body, yet notwithstanding there followeth no Nutrition; and this again happeneth for two Causes, to wit, because either there is no aliment appointed by Nature for the nourishing of the parts; or if there be any appointed for this purpose, yet notwithstanding it cannot be rightly assimilated. There is no aliment appointed unto the parts, either because the Chyle is not so exactly elaborated in the Stomack that it may be converted into good blood; or else, because although the Chyle be sufficiently and rightly elaborated in the Stomack, yet by reason of some fault in the Liver it is not converted into good blood; or else because, that although there be Chyle generated in the Stomack, and that accordingly blood be bred in the Liver; yet it is oftentimes dissipated and wasted by some certain Causes; such as are overmuch exercise, Watchings, Cares, Griefs, and Diseases, which melt away, dissolve, and dissipate the aliment; so that there is too great an evacuation hereof by the Belly, by Sweats, and by the flux of Blood; and such likewise are, immoderate Rest, Meats and Medicaments that dry excessively, Fevers, especially such of them as are acute and Malignant. But the Nutriment is not rightly assimilated by the parts, in regard of some vicious quality it hath in it, by reason of which it cannot be assimilated by the parts; and so likewise the Nutrition may be frustrated by some external error; or else by reason of the Object, to wit, because the Blood is such that it cannot by the nourishing faculty be perfectly overcome and assimilated.

But now in regard of the faculty, there is not a sufficient Nutrition, by reason of some defect and want of native heat, and radical moisture. For Nature maketh great use of this Native heat, as of the next instrument in nourishing. And this especially happeneth by reason of the preternatural affects of the Heart, and principally its heat and dryness; whether it be that the Heart be primarily affected (as it is in the *Hedick Fever*) or else that it suffer through some default of the neighboring parts, as it happeneth in the Ulcer of the Lungs. For whereas the nourishing faculty (as we said erewhile) maketh great use of the innate and Native heat (as its principal Instrument) in retaining, Concocting, agglutinating, and assimilating, and it being so that the innate heat is cherished by the heat that floweth in; if the temper of the Heart be not right, and as it ought to be, then the heat that floweth in

2.  
In regard  
of the nourish-  
ing faculty.

in, and consequently the innace heat likewise will be much amiss, and not rightly tempered; and so it can be no fit Instrument of the nourishing Faculty. And that that Hectick Feavers do but slowly and sensibly bring to pass; this the burning and melting Feavers accomplish in a very short time; by the heat whereof not only the aliment and substance of the body is consumed and melted away, but likewise the temperament both of the Heart, and also of the whol body is converted into that which is more hot and dry. The same happeneth by reason of over hard labors, cares, long continued diseases, and in general, all causes that are able to consume the Radical moisture, and weaken the Native heat.

*The subject:* Now this Atrophy happeneth especially in the softer parts, the fat and the flesh; and indeed the fat is first of all wasted; and then afterward the flesh is likewise extenuated. But now as for the harder parts (such as are the Membranes, Cartilages, and especially the Bones) although these may also in the like manner be dried; yet notwithstanding they cannot possibly be so extenuated and diminished, that thence the whol body should decrease. And hence it is likewise that the said extenuation and Atrophy of the body doth appear especially in those parts in which there is much fatness, and where there are more or greater Muscles, as in the Eyes and Temples.

*The particular Atrophy*

*The causes thereof, which are the same*

The Atrophy that happeneth in the parts is various; It happeneth oftentimes privately in the Limbs, the Arms, and the Thighs. And hither belongeth the Atrophy of the Eye.

As for the Cause of the particular Atrophy, like as the Causes of the Atrophy of the whol body consist in some one principal Bowel, whose action is necessary for the nutrition

of the whol Body; or is indeed universal, and such as may exsiccate and dry the whol body: so in like manner the particular Atrophy of any one part hath a private cause, or at least such a one as belongeth unto that particular part. Yet notwithstanding the Causes are the same as of the universal Atrophy, to wit, the weakness

*The weakness of the Nutritive Faculty.*

of the Nutritive Faculty, and the defect of Aliment. The Faculty is hurt when the part is over cooled, and left destitute of its proper heat. For if this happen, the part can neither attract, nor retain, nor alter, nor assimilate the Aliment. Now the part is refrigerated, and the heat decayed, and rendered dull, and unfit for action, not only from the external Air, as also from cold water; but likewise it may proceed from overmuch rest, in the Palsie, or else from the straightness of the passages through which the Spirits flow in. The Nutriment faileth especially

*The defect of nutriment*

ally by reason of the narrowness of the passages through which it floweth unto the part that needeth it. And this happeneth for the most part from external causes, when the Veins that carry the blood unto the part for its Nutriment, are pressed together by the bones when they are loosened and out of joynt, or else from some certain Tumor that is nigh unto it, or by the brawniness and hardness of the flesh; or else lastly, when the Veins that convey the Nutriment are cut in sunder. See likewise Galen's Book of Marcor, a Species hereof, arising from an Hectick Feaver.

### Signs Diagnostick.

The extenuation of the whol body, as likewise of some one particular part thereof, is visibly apparent to the sight, so that there will be no need of many signs. For if the whol body be greatly wasted by an Atrophy, then the Face falls away, and becometh lean; the Temples fall down, the seat of the Eyes is rendered hollow and deep, the Nostrils become sharp; and such kind of Face (because that Hippocrates describeth it in his Prognosticks) they commonly call an Hippocratical Face. All the Ribs are conspicuous, the shoulder blades and the Chancel bones stick out, the Neck is extenuated, and the Larynx (or the top of the rough Artery) buncheth forth; the Belly falleth down, the Buttocks become withered and weak, the Thighs, Arms, Hands, and Feet, are emaciated and grow lean. But in regard that the Atrophy hath its dependance upon many and several causes, they are therefore all of them to be inquired into, that so the Cure of them may the more rightly be proceeded in. And therefore enquiry must be made whether external Causes, to wit, fasting, cares, grief, over hard labor, and the like, went before. If we find no such thing, we are then to make enquiry into the internal Causes; to wit, whether there be present a Hectick or any putrid Feaver, or whether there had not been one a little while before; and likewise a discovery must be made touching the Stomach, Spleen, and Liver; in what state and condition they are: for by the Diseases of the Bowels it may easily be known what the Cause of the Atrophy is.

### Prognosticks.

1. By how much the more the Atrophy is but recent and newly begun, by so much the more easily it is cured; but by how much the longer it hath continued, by so much the more difficult it is to be cured.

2. When only the Alimentary humor is consumed, there is then hopes of an easie and speedy Cure: but that Atrophy is more difficultly cured, in which the substance of the flesh is already wasted; and most difficult of all, when the Membranous and fibrous parts are already exsiccate and extremely dried. Yea, such an Atrophy can no more



more be cured than that Atrophy that befalleth all persons whatsoever that live unto an old age.

3. If the Native heat be not as yet so far forth weakened but that it may possibly be repaired, there is then some hopes of recovery; since that the Cause being removed, and the heat restored, there may be nutrition again procured unto the body.

4. And therefore we altogether conclude, that from the Causes especially we are to conjecture what we are to hope for as touching the Cure. For if those causes may be taken away and removed, there is then some hopes of the recovery of health; but if they may not, there is likewise then no hopes of safety.

### The Cure.

As for what concerneth the Cure of an Atrophy; when the Body is over dried, and that the Atrophy dependeth upon the defect and failing of Nutrition, it sheweth that then humectation or moistening of the body is first of all to be procured. Now the body is moistened, if

*In those that are found.*

we do our endeavor that the Aliment may be drawn forth out of the Veins unto all the parts of the body; and that being attracted it may be retained and assimilated by the parts of the body. But first of all, all the Causes, whether they be evident and external, or internal, they are to be removed. And therefore if fasting and hunger, went before, let sitting food be again administered; if overmuch labor, solicitous cares and troubles of the mind, and the like, these all of them are to be removed. For these Causes being taken away, and convenient food being exhibited, the body is easily restored.

But in those that are sick, if by reason of the dejected appetite, and some disease, either the Aliment be consumed, or the Faculty weakened; that disease being removed, and the sick person taking food again, the restoration of the body followeth. But now for the curing of the diseases of the Stomach, Liver, Spleen, Lungs, and in what manner these and the like Diseases are to be removed, we have abundantly taught you in our Practical Physick. From whence this likewise appeareth very plainly, that it is but in vain for us to use our utmost endeavor for the nourishing of the body, whiles the body is replenished with vicious humors; For the more we nourish impure bodies, the more we hurt them, as Hippocrates tells us in the second Book of his Aphorisms, Aphor. 10. For even the good juices and meats are likewise corrupted by the said vicious humors, and so the Cacochymy is augmented. And therefore these bad and offensive humors are first of all to be prepared and evacuated. And this is altogether true in the Cure of all and every Atrophy, that our main care and regard must be in reference

unto the cause upon which it dependeth; and that our first and chief pains must be bestowed in the removal thereof: and afterwards we are to bethink our selves how the extenuated body may again be fetcht up and restored by Aliment. There ought also to be great care taken, that this very restoration of the body be rightly accomplished. And therefore first of all there ought to be given Aliments that are soon and easily concocted; and next of all, such as do a little nourish, although they be more difficultly and slowly concocted. Unto such as are free from Feavers and Obstructions, and that are not troubled with any pain in the Head, neither have their Hypochondria distended, Milk may very fitly be allowed; Women's Breast Milk especially, then Sheeps Milk, thirdly Cows Milk, adding thereto a little Sugar; as also the juices and Broths of Flesh, as of Partridges, Hens, and Pullets, Capons, Wether Mutton, Veal, together with Bread; and especially these Broths that they call consummate and restoring Broths. Those Emulsions likewise are singularly good that are made of Almonds, Barly, with Wheaten flour. But this is especially useful (and here in this case much approved of) that is made of the bruited pulpy flesh of a Capon, Almonds, Sugar, Milk, and the flour of Rice. They likewise here very much commend the Indian Nut, and they write, That by the alone use hereof extenuated bodies have been fatted. In a cold Marcor Wine is allowable, and may befit; but in a hot and corrid Marcor it is altogether to be avoided.

*A note touching the manner of refectiō.*

But now in the manner of Refection and Nutrition, Hippocrates in his seventh Aphorism of the second Section is to be observed. Those Bodies (saith he) that have been a long time extenuating, are slowly and by degrees to be repaired again; but those that have had but a short time for their wasting, must in as short a space be restored to their wonted fleshiness. For (as Galen explains it) those bodies that are in a short time extenuated, they suffer this, not from the colliquation and melting of the solid parts, but from the evacuation of the humors and the spirits: but those bodies that have been long extenuating, in those the very flesh melteth away; and the other parts likewise (by which the concoction and distribution, and sanguification is perfected in the whole body) are rendered and made lean: wherefore there cannot be so much aliment concocted as the body stands in need of. And because of this we are to take the longer time in the refectiō and repairing of such like decayed bodies, and their Nutriment must be but thin and spare; this sparseness of Nutriment being by Hippocrates termed slowness in nourishing. But as for such as have only their humors and spirits evacuated, in these we may safely and without any the least danger cause a speedy and full refectiō

on and restauration; in regard that the strength of the solid parts serveth here for a firm foundation.

*The frictions and baths that are to be administered*

After sleep, gentle Frictions may be instituted, the hands being first anointed over with the Oyl of sweet Almonds. A Bath of Waters is likewise very useful: for it evidently moisteneth those that are over dried; as we may easily perceive in such as have travelled long in the hot and scorching Sun, or else have been over exercising themselves any other way, and thereby are made over hot; as also in such as have their moisture overmuch dried up by watchings, cares, or by any other waies and means. And Galen is very frequent in the mentioning of Baths; which here and there he largely treateth of; inasmuch that unto us (who have no such great regard unto baths) he may seem something too curious. But at this very day many in Asia do imitate the Care and Custom of the Romans in their bathings; and these Asiaticks place almost all their whol delight in their Baths; imitating the magnificence of the Ancients in their stately structures for this very purpose, and with emulation endeavoring to exceed them in this their luxury and prodigality. For there in their Baths are all things to be had that may possibly be desired either for health or pleasure; touching which see further in Prosper Alpinus his third Book of the Egyptian Medicam. Chap. 15. 16. and to the following, even unto the end of that Book.

*The Cure of a particular Atrophy*

But now as for the Cure of a particular Atrophy, Galen (in his Book of the Office of a Physician, Chap. 3. Text 32. and in his fourteenth Book of the Method of Physick, Chap. 16.) bath taken great pains to shew us in what manner it is to be performed. For whenas the private parts do wither away, and are extenuated by reason of the hinderance of the afflux of the Aliment, and the languishing heat of the part; the Physitian thought then to use his utmost endeavor, that so strength and heat may again be restored unto the part, and that the afflux of blood unto the part may again be procured. Those means that restore strength and heat unto the part, are, a gentle and moderate rubbing of the Member, Motion, and the suppling of it with warm water: the same means do likewise draw and allure the blood unto the part. Now this friction, and suppling with warm water ought so long (and no longer) to be continued until the part be made somewhat red, and be as it were a little swollen, but not so long, until it be again asswaged and fallen. The parts may likewise be fomented; or (if their condition will bear it) even soaked and bathed in baths made of Sage, the tops of Juniper, Lovage, Lavender, Mallows, and Marsh-mallows; with which when the part is sufficiently fomented, it may afterwards be anointed with Oyls or convenient Unguents.

#### Unguents.

There are many such like Unguents and Emplasters to be had: as for instance,

Take Unguent Dialibæ, Aragon, and Martiatum, of each one ounce and half; Oyl of Laurel, of Spike, and of Castoreum, of each two drams; Mingle them and make an Unguent. Or,

Take Mans Fat, the Yew Tree, of each as much as you wil, the Pouder of Savine as much as will suffice, and make an Unguent. Or,

Take Bdelium, Opopanax, of each one ounce; Dissolve them in Wine, and strain them. Then add of Hogs fat three ounces; Goose fat and Hens fat, of each one ounce; Oyl of old Olives four ounces; Turpentine and Wax, of each one ounce; mingle them over the fire, and boyl them until the Wine be consumed: and at length add of the Pouder of Mastick, Frankincense, and Fenugreek, of each one ounce, and make an Unguent.

#### Emplasters.

There may likewise such a like Emplaster be imposed: Viz.

Take Wax, Rosin, Turpentine, of each one pound; mingle them upon the fire; and afterwards add, of Mastick, Frankincense, Galbanum, Saffron, long Pepper, Cinnamon, Nutmeg, Mace, Cloves, Zedoary, Galangal, Ginger, Grains of Paradise, and Nettle seed, of each half an ounce; and make an Emplaster. Or,

Take the Leaves of Lovage fresh and new, the tops of Savine, and Juniper, of each two handfuls; Camomile flowers half a handful; Juniper Berries half an ounce; when you have sliced and bruised them wel, then pour upon them the Oyl of Bayes, and Lillies, as much as will serve to cover them all; of Hogs Grease three ounces; of Wine two ounces; boyl them until all the moisture be wasted; and then add Oyl of Spike, and Juniper Berries, of each one dram; Mustard seed powdered one ounce; the Root of Pellitory three drams; Mustard two drams; Wax as much as will suffice, and so make a Liniment.

#### A Fomentation.

For those that are offended by Remedies that are fat, they may have a Fomentation made of the Water following, wherewith the Member may be bathed; Viz.

Take Castoreum one dram; long Pepper, Pellitory, Grains of Paradise, of each two drams; the Berries of Spurge-Olive, (by the Greeks called Coccognidia) or of Nettle half an ounce; Rocket one dram and half; Juniper Berries one handful; Sage, Mint, Organy, Mother of Thyme, St. Johns wort, of each one handful; Spirit of Wine three pints, destil them; or at least let them stand infusing a long while, to wit, for some certain daies time; and afterwards let them be strained.

Dropax.

*Dropax.*

After this, the Ancients did also on the fourth day administer those Remedies that were vulgarly called *Pications*. Now a *Dropax* or *Pication* was a Medicament that they made of Pitch dissolved in Oyl, with which blood-warm they made a Liniment for the extenuated part, and there they kept it on until it was cold; then they removed it, and applied a fresh one; and this was often repeated, until at length the part became red, and turgid or puffed up. Then after this, the *Pication* being removed, they anoynted the Member with the Oyl of sweet Almonds, or some kind of fat; and in the Evening the same was repeated as before; and in this manner they handled the part so long, until it again waxed thicker.

Which if they could not effect by the said *pication*, the Ancient Greek Physicians then made use of a Remedy, that was by them termed *Epicrusis*, and *Catacrusis*, i. e. a *Percussion*. For they smote the lean part with certain *Fecula's* (provided purposely for this use) untill such time as the part became turgid, swollen and red; and then immediately thereupon they anoynted it with some fat Medicament or other: but our Physicians for these *Percussions* do make use of those Nettles that are Green and Singing.

at all take both a Wound and an Ulcer: yet notwithstanding properly & in special, the solution of Continuity with magnitude diminished, in a soft part, having its original from a corroding matter, is called an Ulcer. To wit, a Wound and an Ulcer differ in this, that in a Wound there is only a solution of Unity, but there is not any thing of the part necessarily lost; but in an Ulcer there is something diminished and lost from the part affected; and if nothing else, yet at least the *Scar*-skin. For seeing that an Ulcer is alwaies from a corroding Cause, it cannot possibly be but that something must be taken away from the part. For although in an Ulcer there be sometimes some kind of superfluous flesh growing forth; yet notwithstanding there is nevertheless the Skin, yea and the very natural flesh it self wanting: and that Ulcer is no simple and single Disease, but a Compound one, & such as is conjoynd with magnitude augmented. There may likewise together with an Ulcer be conjoynd divers other Diseases, a Distemper, an Inflammation, an *Erysipelas*, an Excrecent Flesh, and other Diseases, which yet notwithstanding belong not unto the Essence of an Ulcer, but may be taken away the Ulcer stil remaining; the essence whereof doth consist only in the solution of Continuity, together with some kind of diminution of the part affected.

The Subject of an Ulcer is a part soft or fleshy, the word *Flesh* being here taken in a large acceptation; viz. not only for the Musculous flesh, but for that likewise that comprehendeth the flesh, of which the Intestines, the Bladder, and other of the Bowels consist; and herein lieth the difference between it and the rottenness that is in the Bones.

*The Causes.*

The nearest Cause is any matter whatsoever it be that hath in it any corroding quality; which comprehendeth under it not only the sharp humors that are bred in the body, but likewise all those external Causes that have in them a corroding power, such as are corroding Medicaments and poysons: for it is false (that which some assert) that the very same Ulcers arise only from internal Causes; since, that experience teacheth us, that the very same Ulcers may be excited also from external Causes. And so (Galen himself being witness in his fourth Book of the Method of Physick, and Chap. 9.) it is most apparently known even by experience it self, that by the Fire, scalding hot water, Oyl, and other the like fervent juyces, in burnings and scaldings, they are not Wounds that are excited, but Ulcers; like as also Medicaments, and Poysons that cause putrefaction and burning, excite Ulcers. And to poysonous and contagious vapors breed Ulcers; like as Scabbiness by contagion and infection breedeth Scabbiness;



# THE FIFTH BOOK.

## THE SECOND PART. *Of Ulcers.*

### Chap. i. *Of the Nature and Differences of an Ulcer.*

Although the word *Helcas*, *Ulcus* (an Ulcer) be in general taken for every solution of Continuity in a soft part, as we may see in Galen his thirteenth Book of the Method of Physick, Chap. ult. where he under the same signification comprehendeth likewise a Wound that is properly so called, in which manner *Celsus* in his fifth Book, and Chap. 6. doth oftentimes without any difference

*An Ulcer what it is properly.*

*The Subject.*

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Scabbiness; to wit, whilest the Contagion that is imparted and communicated unto the Skin, corrodeeth it. And in the very same manner the vapors that are drawn in (by breathing) from the Lungs of Phthisical Persons do exulcerate the Lungs, and by contagion do breed a *Phthisis* or Consumption. And in the like manner, upon the very same ground, Venome and Venereal Poyson being rub'd and chaf'd into any body, or by any means communicated thereunto, infecteth and exulcerate the same. Neither is it of any weight or moment, that *Eustachius Rudius* endeavoreth to reduce such like Ulcers as these rather unto Wounds then unto Ulcers. For by this means he confoundeth altogether the Difference that is betwixt Ulcers and Wounds; in regard that Ulcers & Wounds do not differ only in this, that Ulcers are evermore with a loss of some of the substance, whereas Wounds may be without any such loss; but likewise, in that Wounds arise from some Cause that either cutteth into the part, or pricketh it; or breaketh, or bruiseeth it; but these, to wit, the Ulcers, proceed from a Corroding Cause; whether it be external, or whether it be internal. And this is also manifest in Medicaments that putrefie (for who can deny that to be an Ulcer that is excited from the *Juyce of Spurge*?) from the which said Medicaments that Contagion that is in *Scabies*, the French Pox, and the *Phthisis* or Consumption, differeth but very little. For although (as *Rudius* there Objecteth) we do not deny that such like Poysons have likewise in them a power of infecting the humors, which being corrupted may afterward also promote these Ulcers: yet notwithstanding we say, that all power whatsoever of corroding is not to be denied unto this very Contagion it self, although afterward (when the corruption of the humors happeneth in the body) the increase of the Ulcer be thereby much promoted and furthered.

### The Differences.

The Differences of Ulcers, some of them are Essential, others of them only Accidental. The Essential are those that are taken from the very form of the Ulcer, from the Subject, and from the efficient Cause thereof. Those that are taken from the form of the Ulcer are drawn from its figure, its magnitude, and the like. For some Ulcers are great, others but small; some of them long, others short; some of them broad, others but narrow: some straight, others again oblique, wreathed in, and fistulous; some of them equal, in which the flesh in all the parts of the place affected is equally wasted; others unequal, in which there is a greater part of the flesh consumed in this place, and a less portion in another place of the same Ulcer. From the part affected some Ulcers are said to be External, others Internal; some slight and superficial, others of them profound and deep; and they may be in this, or in that part.

The Differences arising from the Causes shall be shewn in the next following Chapter, wherein our purpose is to treat of the Causes of Ulcers.

But now the Accidental Differences of Ulcers are those that are taken from such things as are without the Nature & Constitution of the Ulcer; and they are such as are taken from the situation of the Ulcer, or else from their time; viz. that some of them are Recent and new; others of them old and inveterate.

And hither likewise there may not unfitly be referred those Differences that are taken from Causes accidental, and such as are not common unto all Ulcers; to wit, that some Ulcers are joynd together with a fluxion, but that others of them want the said afflux; that some of them are pure, others of them fordid and foul, corroding, eating up, and Creeping along. For these Differences depend upon the Causes. And hitherto likewise belong those Differences that are taken from the Accidents and Symptoms of the Ulcers; to wit, that some of them are altogether void of pain, others of them accompanied with a pain, an itching, pricking, and burning; some of them easie to be cured, others difficult and rebellious, by the Greeks called *Dyssepulota*; some of them benign and favorable, others such as have contracted a most pestilent and malignant quality; And hither likewise are to be referred those Ulcers that they commonly call *Chironia* and *Telephia*. And yet nevertheless besides these Differences, that may be properly called such, there may yet some others be given, that are improperly so called; and such as may rather be termed the Complications of Ulcers with other Diseases, then Differences; and such like Differences are these; to wit, that some Ulcers are conjoynd with Pain, a Distemper, a Phlegmone, a Callous or Brawny Flesh, a Gangrene, a Cancer, Worms, and the Rottensness or Corruption of the Bones.

And (the truth is) the Differences and Distinctions of Ulcers are drawn from the Springs aforesaid. But it being a truth likewise that some of the sorts of Ulcers are taken and drawn from divers and several Fountains (that so we may not treat of Ulcers without any Method) I conceive that our Discourse touching these Ulcers will be most Methodical if we handle them in the order following; to wit, 1. If we first of all treat of a simple Ulcer, or an Ulcer considered in the General. 2. Of an Ulcer with a Distemper. 3. Of an Ulcer with an afflux of humors. 4. Of a fordid and foul Ulcer. 5. Of an Ulcer with Tumors. 6. Of Flesh growing forth luxuriant and proud. 7. Of an Ulcer that is wan or Leaden coloured, and withall Callous. 8. Of an Ulcer that is hollow, and fistulous (which we commonly call the *Fistula*.) 9. Of an Ulcer with Worms. 10. Of an Ulcer with a rottensness of the Bones. 11. Of the Ulcer by the Greeks called *Dyssepulota*, Malignant, the Ulcers *Telephia* and *Chironia*, and *Phageda-*

na. 12. Of pain with an Ulcer. 13. Of the Ulcers of the Legs and other parts. 14. Unto which we wil add something touching Burnings. 15. We wil conclude all with a short Discourse touching a Gangrene, and Sphacelus.

### Chap. 2. Of a simple, or single Ulcer.

**I**N the first place therefore we wil handle a simple Ulcer; and shew you what are the Causes of an Ulcer considered in the general; and what differences it hath according to its form, its causes, and the place affected: by what signs the Ulcer and its essential differences may be known; and what is to be pre-advised as touching the cure; and what the Ulcer in general indicateth and pointeth out; and lastly, what kind of Method and course it requirith for the curing of it.

#### The Causes.

We have already told you in the precedent Chapter, that the neereft cause of an Ulcer is a matter that hath in it a corroding quality, whether it be bred in the Body, or whether it happen unto the body from without.

Of the first sort are all Humors whatsoever that are sharp, and endued with a corroding Faculty bred in the body. But now this humor is either bred without the part affected, or else it is generated in the very part it self that is affected. Without the affected part there is generated a cholerick humor, a salt flegm, a Whey that is salt, nitrous and sharp, and black Choler or Melancholy. For these if they be bred in the body, and flow unto any one part, they may corrode and exulcerate the said part. But from what Causes such like humors may be generated in the body, we have already shewn you in the second Book of our Institutions, touching the causes of Diseases, and elsewhere. Now they flow unto the part affected, either by transmission, or by attraction; both which from what causes they proceed, we have declared above, in the first Part, and Chap. 5. of an Inflammation. And more especially in the Spring time, various Ulcers are wont to arise from some internal vice of the Humors, as likewise from unseasonable and immoderate exercises. For if (as Galen writeth in his third Book upon the Aphorisms, Aphor. 20.) in the Spring the Body be impure, there happeneth indeed then some such like thing in the Spring time, even as we see there is wont to be in the exerciser of the Body. For although these exercises be never so safe and healthful in themselves; yet nevertheless if you bring forth a man that is full either of flegm or yellow choler, or black choler, or even also of blood it self to exercise, you shal undoubtedly by this exercising of him procure unto him either the Falling-sickness, or the Apoplexy; or if not these, yet most assuredly the rupture of some Vessel in the Lungs; or a most acute and violent Fever. But such

as have had exercise enjoynd them, for the purging out of humors that lie low and deep, their exercise drawing forth unto the skin a Cacochymy, that is to say, abundance of bad and offensive humors, and scattering it throughout the parts, doth for the most part excite and cause Ulcers, and the Scabies or Scabbiness. For this is that which Hippocrates hinteth unto us, when he saith, That if we exercise an impure and impurged body, Ulcers wil from thence arise. And so indeed in the very like manner, in the Spring time, the heat of the ambient Air dissolving the humors calleth them forth unto the skin, by an effect altogether like unto that of exercises. For the effects of the Spring do not only resemble the effects of Exercises, but they are also most like unto the works and operations even of Nature her self. For indeed the parts that the Spring time affecteth (like as doth Nature her self) are, as wel to cause that occult and secret perspiration throughout the whol body (by the which all the superfluities of the body are emptied forth) as thoroughly to purge the body also by diseases, after a various and different manner. Thus saith Galen. But then these Humors get their acrimony in the part it self, by reason of some distemper in the said part. And after this manner, like as even the Pus or purulent matter it self, by its concoction and long abode in the part becometh most sharp, and stil so much the sharper and corroding, by how much the humor (out of which it is generated) is more tart and sharp; so likewise doth the blood, which is corrupted by the part affected, and so putrefieth.

But now the Causes that happen unto the body from without, are Septick (or putrefying) and Caustick Medicaments. Neither do I here exclude the very actual fire it self, from bearing a part in the number of the external causes; in regard that the Eschar that is left remaining appertaineth rather unto ulcers than unto wounds. And higher likewise is to be referred that contagion, by means whereof the vapors exhaling from the Lungs of Phthisical persons, & by others attracted & drawn in with the breath, do likewise exulcerate their Lungs, and so cause in them a Phthisis or Consumption; and also the nastiness and infections of such as are scabbed, Leprous, and affected with the foul Disease, being communicated unto the skin, do exulcerate it, and there generate a like disease. But that attraction which is caused in gauling & interfairing, or in wearing of the skin by the wringing and streightness of the shoo, is not rightly and fitly referred unto, and reckoned up amongst the highest and most immediate Causes. For by the said attrition the humor only is attracted, that afterwards corrodeeth the Skin, and exciteth therein little bladders or blisters. But now what the special causes of special Ulcers are, we shal afterwards shew you in its proper place, where the peculiar causes of each particular Ulcer shal be explained.

Signs

vity of the Ulcer cannot be filled up, neither can there flesh enough grow forth; from whence it is that an hollow Cicatrice is caused.

19. If the Ulcer after such time as it is filled up with flesh, and that a Cicatrice ought to have been brought thereupon, wax crude and raw again, there is then great cause to fear, that the Ulcer wil turn into a Fistula.

20. Ulcers that are in the Feet, and in the Hands, are wont sometimes to hasten on Inflammations of the Glandules in the Arm-pits, or in the Groins, and Tumors in bodies that are plethorical and cacochymical. For the matter flowing down unto the ulcer in the Hand, or in the Foot, those very parts themselves likewise being become more loose and weak do first of all receive and drink it in.

21. The ulcers of the Thighs are for the most part hard to be cured, and especially if they be cherished by any distemper and default in the Spleen: for then the thick and melancholy humors that flow unto the ulcer do hinder the Cure thereof.

22. Ulcers that have continued long, and are now become inveterate, are not to be cured without much danger, unless the body be first of all carefully purged, and a good course of Diet be observed; of which very thing *Gulielmus Fabricius* (in his third Century, and Observ. 39.) giveth us an instance in a certain man, who having had an inveterate ulcer cured in his left Thigh by an unskilful and immethodical Empirick, after some few months was surprized with a Pleurisie in his left side, upon which he died: and that during his sickness he spit forth just such stuff and excrements as before were wont to flow forth of the ulcer. See likewise *Ambrose Parry* (in his seventeenth Book, and Chap. 51.) touching *Pus* likewise from an ulcer in the Arm evacuated by the Urine.

The rest of the Prognosticks shal be handled in the special differences of the ulcers.

### Indications.

Since that the Essence of an ulcer consisteth in the solution of unity, and the diminution of the magnitude of the affected part; the solution of unity sheweth that union must be endeavored, and that which is lost and diminished indicateth its own restauration: to wit, the ulcer (as an ulcer) is to be filled up with flesh, and united, and then shut up with a Cicatrice. But then when the ulcer is conjoynd with its cause, that either excited the ulcer from the very beginning, or else if (in the Cure) it obtain the Nature of that cause without which the ulcer had not been, the said cause is then first of all to be removed. But then it is requisite likewise that the temper of the part affected, as also the blood that floweth there-to be such as it ought to be: but if there chance to be any thing amiss in these, it is to be corrected;

touching which we shal hereafter speak further in the special differences of Ulcers.

If therefore that Humor that excited the ulcer be still present, it is to be evacuated: for in every affect in which the cause is still present, the Cure is evermore to be begun from the removal of the Cause. And moreover, because that in the beginning there wil alwaies fall forth some of the blood without their proper vessels, and because that oftentimes together with it other vicious humors in the body flow thither; lest therefore that which sticketh in the pores of the parts should putrefie and breed an Inflammation, this blood is to be concocted, and changed into good and laudable *Pus*. From whence likewise it is that *Galen* in his Book of the times of the whol Disease, and Chap. 3. writeth that ulcers have their peculiar times; and that in the beginning there is thrust forth a thin, unconcocted, and waterish *Sanies*, which in the augmentation by the help and benefit of concoction becometh thicker; and at length (in the state) is changed into *Pus* that is good and white. And therefore in the beginning of an ulcer it wil be requisite to use Concoctors, which they commonly cal Digestives. And furthermore the filth and impurities which are wont to be generated in an ulcer (in regard that they hinder the curing thereof) are to be wiped clean away. So soon as the ulcer is cleaned, the Cavity thereof is to be filled up with flesh: and at the length the ulcer is to be shut up with a Cicatrice.

There is yet nevertheless likewise regard to be had unto the parts affected. For in the ulcers of the external parts, the green rust of Brals, burnt Brals, Vitriol, Antimony, and the like, have their place; which nevertheless are by no means to be admitted of in the internal parts. If likewise the part be so constituted and framed, that it may give a passage unto other things (like as the Gullet doth) the Medicaments are then so to be ordered, that they adhere unto the part. Those parts that are endued with an exquisite sense wil not admit of sharp Medicaments; which those parts that are of a more dul sense wil wel enough sustain: touching which we shal speak (here and there) in the particular ulcer.

But now how an ulcer may be filled up with flesh, *Galen* teacheth us in his third Book of the Method of Physick, and Chap. 3. To wit, unto the generating of flesh there are necessarily required the efficient Cause, and the matter. The efficient is Nature, which (as it doth in the whol body, so likewise) in each particular part doth attract and draw so much Aliment as is necessary, and there she retaineth it, concocteth, applyeth, and assimilateth it. The matter is a pure and sincere blood, that is generated from meat and drink. But because (in every concoction) there is generated a twofold excrement; (one more thin, that insensibly exhalet, or else is discut-

ted



fed by Sweat; the other more thick;) the same likewise happeneth in the generation of Flesh in the Ulcer; and if they be left remaining in the part, they wil moisten it, and hinder the generation of Flesh. And therefore these Excrements in the Ulcers are to be clean wiped away, and dried up. And this is that which is so frequently & commonly alleadged out of *Galen* ( in his third Book of the Method of Physick, and Chap. 4. and in his fourth Book of the Method of Physick, and Chap. 5. and in other places, here and there) where he saith that every Ulcer requirerth exsiccation. And *Hippocrates* ( in the beginning of his Book of Ulcers ) thus writeth: *That which is dry (saith he) cometh neer unto that which is sound; but that which is moist cometh very nigh unto that that is vitiated.* And so the Cure of an Ulcer it is indeed the work of Nature, that restoreth the flesh that is lost from the Blood flowing unto the part, and bringerth a Cicatrice over the Ulcer being filled up with flesh. The Physitian he only removeth those impediments that are an obstacle to Nature in her operation, whilst he cleanseth away the Excrements, and drieth the Ulcer; and when he doth this, he is then said to generate Flesh, and to introduce a Cicatrice.

### The Cure.

At the beginning therefore, if the body be plethorical, or Cacochemical, then the abundance of Blood is to be diminished, or the Body evacuated, lest that the humors flow yet longer unto the part affected. And withall let there likewise be a good and wholesome Course of Diet appointed unto the Patient, that so there may no more of these bad humors be generated in the Body. And for all those things likewise that we call not natural there ought to be such a course taken, that nothing unfitting or inconvenient may happen, nor any hurt be offered unto the Ulcer.

Moreover in regard that it cannot well be, but that there wil somewhat of the Blood that is poured forth of the Veins, and something of the humors likewise stick in the Pores of the parts; that so therefore this may be Concocted, and converted into *Pur*, Digestives or suppurating Medicaments are to be made use of, which in softer Bodies ought to be more mild and gentle (such as are those that are provided of the Oyl of Roses, and the Yelks of Eggs;) and in those bodies that are not so soft, but harder to be wrought upon, they are made of Turpentine, the Oyl of Eggs, the Oyl of Roses, the Oyl of Mastick, the Yelks of Eggs; in Bodies that are more dry they are made of Rosin Turpentine, or Rosin

of the Fir Tree, the Powder of Frankincense, the powder of Linseed, Wheat flour, Fennegreek, and Hens fat.

After this Cleansers are to be made use of. Yet notwithstanding it often to happeneth, that with one Medicament we satisfie two ends and Scopes, to wit, both concoct and Cleanse. Whereupon it is, that then in this case suppurating Medicaments are to be mingled with Deterlives or Cleansers; and so the Suppuratives are made more hot, and more dry then otherwise they are wont to be. Yet nevertheless, in this commixture, there is a regard to be had unto the times; since that in the beginning Suppuratives, in the end Deterlives ought to prevail. And indeed it is more safe ( forthwith in the very beginning) to mingle Absterlives with Suppuratives, then to use Suppuratives alone by themselves. For Nature is never idle, but even in the beginning betaketh her self unto the generating of Flesh; and to this end she separateth the excrements, which are therefore to be wiped away: neither must we be easily perswaded to make use only of Suppuratives; since that it may then happen that by the use of them the Ulcer may be rendred more moist and sordid: which haply might be the Cause, why *Galen* in the Cure of Ulcers maketh no mention at all of Suppurating Medicaments. And therefore most commodiously unto these Suppuratives, or Digestives ( as they are usually called ) there are presently added, Frankincense, Rosin Turpentine, and Rosin of the Fir Tree, Oyl of Mastick, the Juyce of Smallage, and the like.

But now such like Medicaments as these may be made in a various and different manner, according to the various Constitution of several Bodies. In a Body that is soft and moist, let such a one as this following be made.

Take Oyl of *Roses* one ounce, *Turpentine* two ounces, the Yelk of one Egg, and so mingle them, &c. That following is yet more dry:

Take Oyl of *Mastick*, and of *Turpentine*, of each half an ounce; the Yelk of one Egg, and so mingle them, &c. This following is yet stronger.

Take *Rosin* of the *Fir Tree* one ounce, Oyl of *Roses* six drams, the Powder of *Frankincense*, one dram; mingle &c. If there be need of more absterlives, then,

Take *Honey* of *Roses* one ounce, *Turpentine*, half an ounce, the Juyce of *Smallage* one ounce, the Powder of *Frankincense*, and *Barley flour*, as much as wil suffice, mingle &c.

The Ulcer being once cleansed, *Sarcoticks* ( that is to say, Medicaments that breed Flesh ) are to be made use of; touching the faculty of which we have already spoken, in the

the fifth Book of our Institutions, Part 1. Sect. 1. Chap. 9. Now these are of a threefold rank and order. In the first rank there is the Meal or Flour of Barly, of Fenugreek, and of Beans, Frankincense, Manna of Frankincense. In the second rank there are Rosin Turpentine, Rosin of the Fir Tree, and of the Larch Tree, Honey clean scummed, Honey of Roses, Aloes, the Meal of Lupines, of the bitter Vetch Orobus, *Pompholyx*, or the foil of Brails. In the third rank and order there are, the Meal of the Vetch *Ervum*, raw Honey, the Roots of Aristolochy, of Flower-de-luce, Myrrh, Antimony, *Cbaletis* or red Vitrioll.

Among the Compound there are these, *Viz.* Unguentum *Basilicum* the greater & the less of *Galen*, Unguentum *Aureum*, de *Tutia*, de *Matrisylvia*. Touching the Emplaster that is made of *Hydreleon* (Oyl and Water) and the Spume or Froth of Silver, see *Galen* in his first Book of the Compolit. of Medicam. according to the kinds, Chap. 6. Or,

Take Myrrh, Aloes, of each half an ounce; Frankincense one ounce, Mustick half an ounce, Gum Elemi two drams, Turpentine one ounce, Colophony half an ounce; Make an Unguent according to Art.

And therefore out of these the Physitian may make his choice of such Medicaments as are most fit and convenient for every severall and particular Constitution. For the body by how much the more moist it is, by so much doth it require Medicaments that are less drying and Absterfiv: and on the Contrary, the Body when it is more dry, it then requireth the stronger sort of drying Medicaments.

And so likewise in the colder times and seasons of the yeer, we are to use those Medicaments that are somewhat Warmer; but in the hotter seasons of the yeer, the Medicaments that we make use of may be less hot. For if we apply Medicaments that are weaker then is fitting, then there will be great store of *Sanies* (the thinner sort of Corruption) gathered together in the Ulcer, and the Flesh that is generated will be soft and flabby. But if they be overstrong and overdrying, the Ulcer will then be rendred dry, and the Lips thereof will become very red, the flesh will be consumed and sometimes the Excrements of the Ulcer will be bloody, and a certain kind of mordication or biting will be perceived in the part. But if the part be rendered exulcerated and dry (as naturally it is wont to be) and that neither *Sanies* nor Pus flow forth of the Ulcer, and that there appear a good colour in the Flesh, it is then a Sign of a fit and convenient Sarcotick Medicament.

And here likewise the very form of the Medicament is selfought to be regarded. For they are wont to be applied either liquid or humid, or Dry. In bodies hard and dry, and when a harder flesh is to be generated the Sarcotick Powders that are to

be sprinkled upon the Ulcer are most fit. As,

Take Frankincense halfe an ounce, Dragons Blood, Colophony, of each two Drams, and make a Powder. Or,

Take Frankincense half an ounce, Aloes two drams, Dragons Blood, and Sarcocol, of each one dram; make a Powder.

But if the Bodies be softer, we use those Medicaments that are moist. And yet nevertheless, touching the preparation of Liniments and Unguents, it is to be observed that they be not too soft. For such as these are melted by the heat of the part, and so easily flow about and spread all abroad. And therefore if the Ulcers be not very deep (for in such those Medicaments are required that can penetrate even unto it) but that they stick in the Superficies of the Body, we must then make use of those Medicaments that are endued with a thicker Consistence. Moreover, Unguents that are overmoist, by reason of their Oily Nature do mollesse, and generate a flesh that is too loose, and unlike unto that lying under it, especially in dry Bodies.

When the ulcer shal be filled up with flesh, it is to be closed with a Cicatrice, a Skin, or in stead thereof a Cicatrice is to be generated, and by the benefit thereof the Continuity that was dissolved is again to be united. But as in the generating of flesh it is Nature that doth the work, and the Blood that supplieth the matter; so likewise the very same happeneth in the generating of the Skin: the Physitian by the Medicaments only removeth the Impediments. But that which is commonly told us, that the matter out of which the Cicatrice is generated is flesh, which by the assistance of the Medicaments is so to be altered, and by the use of Dryers and Astringents is so to be condensed, that it may become like unto the Skin (if it be understood of the principal Agent) is altogether false. For as the Sarcopoietick (or flesh-causing) faculty in the flesh doth only generate flesh, and restoreth that which is lost; even so the Cutick faculty (as I may so call it) or Skin-making power, in the Skin doth only generate Skin. Whence it is, that never yet by the use of any Epulotick Medicament, or only by the use of Sarcoticks, hath there been known any Cicatrice to be produced in the midst of an ulcer; but it beginneth to arise alwaies from the Skin lying neer unto it, about the lips of the ulcer, and so by degrees is sensibly extended, until that at length the flesh become wholly covered over with the Cicatrice. And hence it is also that oftentimes the ulcers are brought unto a Cicatrice, without any use at all of Epuloticks. And yet we acknowledg that Nature by the use of the said Epuloticks may be much furthered and holpen in her operation. For if this Action be left wholly unto Nature, the Cicatrice will be generated but very slowly; not (as *Fallopins* thinketh) because that the flesh out of which the Cicatrice

is to be generated is so moist that it cannot be dried by the Nature of the cutaneous or skinny part; but it is because the Cutifick faculty in the Skin that is neer unto it cannot (but very slowly) change and convert into Skin, (which to wit, is a dry substance) that blood that floweth in unto it, the said blood being moist: which it wil more easily perform, if it be assisted by Epulotick Medicaments that have in them a drying power. But of what quality these Epulotick Medicaments are, and what kind of Faculties they have in them, *Galen* teacheth us in his third Book of the Method of Physick, Chap. 4. & 5. and in his fourth Book of the Composition of Medicaments according to the kinds of them, Chap. 1. And we have likewise already spoken touching this very thing, in the fifth Book of our Institutions, Part 1. Sect. 1. Chap. 9. To wit, by how much the Skin is more dry than the flesh; by so much likewise ought the Epulotick Medicaments to be dryer than the Sarcotick. But in those that are Active the Medicaments may be as well hot as cold; or both of them, if there be occasion.

But now these Epuloticks are likewise of three sorts, to wit, Mild, Mean, and more strong. The Milder kind are, *Cadmia* washed, the Rind of *Frankincense*, *Aloes*, the Roots of sweet *Cyperis* (which some term English *Galangal*) Lead burnt and washed. The Compounds these; Unguent of *Litharge*, of *Minium* (or *Vermilion*) of *Cerufs* or white Lead, of *Diapompholyx*, and the Cerote of *Vermilion*. The mean and middle sort of Medicaments are these; Flowers of red *Roses*, *Pomegranate* Flowers, unripe *Gals*, the Rind of the *Pomegranate* Tree, *Bole-Armenick*, *Terra Lemnia* or Sealed Earth of *Lemnos*, *Myrobalans*, *Dragons blood*, *Vermilion*, Lead. Of the Compounds; Unguent of *Tutia*, Unguent *Diapompholyx*, *Emplastrum Diapalma*, *Emplastrum Gryseum*, and the Emplaster of *Lapis Calamiparis*. The strongest sort are; *Chalcitis*, *Sarcocol*, *Allum*, *Brass* burnt, the off-scouring of *Brass*. Of the stronger Compounds are these; Unguent of *Tutry*, and the Cerote of *Bole-Armenick*. But now in the choyce of them we are to consider both the Constitution of the ulcer, and the Nature of the body. For it sometimes happeneth that the ulcers which when they were sordid and foul felt no mordacity or sharp biting (as it were) from the Medicaments, do yet perceive and feel the same from them, after such time as they are purged and made clean. Wherefore even then when the ulcer is at the purest, we must from the stronger sort of Absterfve Medicaments have recourse unto those that are more mild and moderate, like as again in sordid ulcers we are to betake our selves unto such as are more absterfve; unless the ulcers were made sordid by the said mordication. For now and then this very thing lieth upon the Physician, as a thing altogether necessary to be done, to wit, that he betake himself unto the

most strong and forcible Absterfve; upon which the ulcer again appeareth corroded and sordid, the flesh that is dissolved and (as it were) melted by the Medicament, defiling and fouling the same; for the colliquated or dissolved flesh degenerateth into a filthy and noysom *Sanies*. And there it behoveth us carefully and diligently to consider, whether or no the ulcer (the flesh lying under it being eaten through and dissolved) be not become sordid and foul, because that when it required a Medicament apt and fit to take away its filth and nastiness, there was yet nevertheless no such Medicament applied and laid on. But now, when the ulcer is rendered more sordid and filthy by the acrimony of the Medicament, this is evidently manifested by the Cavity that is made in the ulcer, which wil be the greater; as likewise the orifice thereof wil be the more red and hot. And then again in the next place, we ought carefully to consider, whether the constitution of the body be soft and moist, or else dry: for unto the soft the more mild, but unto the dryer bodies the more strong and prevalent Medicaments are to be applied.

But the Epuloticks are then to be made use of (as *Galen* instructeth us, in his thirteenth Book of the Method of Physick, and Chap. 5.) when the ulcer is not altogether filled up with flesh, but that there is yet a little thereof wanting. For in regard that Nature is never idle, but that even likewise then when it beginneth to produce the *Cicatrice*, the flesh likewise withal at the same time receiveth yet some further increment and growth; if then at the last Epuloticks should be administered when the ulcer is already altogether filled up with flesh, we might wel fear, lest that before ever the *Cicatrice* should be compleated and fully finished, in the interim the flesh should receive yet a further growth and encrease, and so the *Cicatrice* should thereby be raised the higher. For in regard that the Skin is a Nervous substance, it cannot therefore be so generated anew as the flesh, but in place and stead thereof there is something generated that is like unto the skin, and this we call a *Cicatrice*.

This is likewise to be taken notice of, That Epulotick Medicaments ought to be endued (both actually and potentially) with a drying faculty; and that therefore (for the producing and causing the *Cicatrice*) Emplastres are most fitly and commodiously administered and applied.

*Gabriel Fallopius* in his Book of Ulcers, Chap. 13. propoundeth this Unguent, which he termeth *de Tutia Magistrale*; and he there writeth, that of al that he had ever seen this is absolutely the best. Viz.

Take Oyl of *Roses*, and Oyl *Omphacine*, of each six ounces; Oyl of *Myrtle*, and the Unguent *Populeon*, of each three ounces; *Plantane* Leaves, and *Garden Nightshade*, of each two handfuls. Let the Herbs be cut very smal, and let



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let them be mingled altogether for the space of eight daies, shaking and stirring them wel together every of those daies. Then strain them, and to the straining add, of Wax four ounces; mingle it with the rest upon the fire, until that they be al melted: after this mingle them better with a Wooden Spatter, and while it is yet blood warm, add of the Litharge of Gold or Silver six ounces, Ceruss two ounces, Tutty prepared two drams, burnt Lead six drams, Brass burnt unto a redness three drams, Camphire one dram and half: stir them wel about in a Mortar, by the space of two hours.

#### An Epulotick Powder.

Take the Roots of Tormentil, Bistort, Round Aristolochy, Acorn Cups, Egg-shells burnt, Frankincense, Dragons blood, of each half an ounce; Lapis Calaminaris one dram, Litharge two drams, and make a Powder.

This following Emplaster is likewise very useful; the which I have oftentimes made trial of, and that with very good success. Viz.

Take of the Unguent Diapompholyx, the Emplaster Diapalma, and the Emplastrum Gryseum, of each one ounce; Gum Elemi two drams, Sugar of Saturn one scruple, Wax as much as will suffice, and make an Emplaster.

### Chap. 3. Of an Ulcer with a Distemper.

**B**Ut it many times so happeneth, that the ulcer is not solitary and alone, and pure, but that other preternatural Affects are conjoynd therewith; whereupon also the Cure is varied. And therefore we intend in the next place to treat of these ulcers in special.

And first of al, there is indeed oftentimes a distemper conjoynd with an ulcer; which when it happeneth the Cure of the ulcer is then much hindered. For in regard that the Nature of the part is the Efficient cause of the Cure of the ulcer, and that the blood is the matter: if the part be intemperate, neither of these can be in that right temper that they ought to be, neither can the ulcer be filled up with flesh, nor closed with a Cicatrice, unless the flesh lying underneath it be in its natural temper; as Galen tells us in his third Book of the Method of Physick, Chap. 8.

But what the differences of the Distempers are, we have already acquainted you in the second Book of our Institutions, Part I. Chap. 3. which here also have their place; and there may concur together with the ulcer a distemper that is hot, or cold, moist, or dry; a distemper hot and moist; hot and dry; or cold and moist, cold and dry: and indeed the distemper may be either with or without matter. But of the distemper with mat-

ter we shal speak in the following Chapters. Here therefore in this Chapter we shal treat only of a Distemper without matter.

#### The Causes.

Now such a Distemper as this, either it was present before the rise and appearance of the ulcer; or else it was excited even in the very time of the ulceration. But for the Causes of these Distempers, what they are, we have likewise told you in the place before alleadged. Which that we may apply unto ulcers, a hot distemper in ulcers is excited by a hot Air, by too many Swathbands and bindings, and by Medicaments that are over hot. And on the contrary, a cold distemper is caused by the cold Air, from the not sufficiently fencing and guarding the ulcer with Swathbands and warm Rowlers against the coldness and injuries of the external Air; as likewise it is excited by cold Medicaments. The moist distemper is produced by the moist Ambient Air (and hence it is that in some places the Air is greatly hurtful unto ulcers) and by the flux of humors; touching which more in the Chapter following. A dry distemper is caused by a dry Air, by Medicaments that are over drying, and by the want or scarcity of Aliment. Of Compound Distempers the Causes are likewise compound.

#### Signs Diagnostick.

The signs of a hot Distemper are, that heating Causes went before; and also, that not only the Lips, but even the very flesh it self of the ulcer appeareth more red than usual; and the sick person himself perceiveth a great heat in the ulcer, which for the most part a pain followeth: Cold Medicaments being thereunto applied do exceedingly refresh and delight, and withal do greatly benefit the Patient; and on the contrary hot Medicaments are greatly hurtful; the excrements of the ulcer are sharp and biting.

A cold distemper cooling Causes went before it; in it the Lips of the ulcer decline unto a whiteness, or unto a wan leaden color, and they are soft; and hot things are helpful and agreeable unto the ulcer, but cold Medicaments are on the contrary very hurtful. If the Distemper be moist then moistening Causes had their precedence, the flesh is soft, and appeareth lank and flaggy, and sometimes it groweth forth overmuch; the excrements of the ulcer are many; such things as are drying do benefit, and those Medicaments that moisten do greatly hurt.

And lastly, A dry distemper is known by this, That drying Causes went before, the Lips of the ulcer appear dry, and squallid, and hard; the excrements of the ulcer are but few, or none at al. Moisteners are profitable; but drying Medicaments cause much hurt unto the sick person.



*Prognosticks.*

1. Whereas (as *Galen* tells us in his fourth Book of the Method of Physick, Chap. 1.) for the healing and curing of ulcers the flesh that lieth underneath them ought to be altogether temperate, therefore it is that these ulcers become hardly curable by reason of the distemper in the part lying next under it.

2. Ulcers with a distemper either hot, or cold, or moist, are cured without any great difficulty. For with one and the same pains, and at the same time, and with the very same Medicaments we may both remove the distemper; and cure the ulcer.

3. But those ulcers that are attended with a dry distemper, are the hardest of all to be cured; because that the cure of the ulcer being for a while neglected and laid aside, it becometh the Physician to be altogether intent and busied in the removal of the distemper.

*The Cure.*

A Distemper sheweth that the alteration ought to be by the contraries. Yet nevertheless the Cure ought so to be ordained, that the ulcer (as far forth as may be) may not be neglected. If yet nevertheless we cannot be helpful unto both of them at once, and together, then in this case it becometh us to be most intent about that that is most urgent. But since that the distemper hath in it the nature of a cause, and that it being present the ulcer cannot be cured; the distemper is therefore first of all to be removed, unless it be so that with one labor and pains both the distemper may be removed, and the ulcer cured. If the distemper be with matter, there will then likewise be need of universals; of which we shall speak further in the following Chapter.

*The Cure  
of a hot  
distemper.*

But as for the distemper that is without any matter at all (of which we treat here in this Chapter) and withal hot, this hot distemper indicateth and pointeth at cooling Remedies, which ought to be milder, or stronger, according unto the excess of the heat. And albeit the ulcer requireth drying Medicaments, yet nevertheless in regard that the very heat it self by consuming the humors doth render the ulcer more dry, we must therefore make use of the milder and gentler sort of dryers: but yet notwithstanding these ought withal to be such as are likewise endued with an astringent power; that so the flux (which the heat is wont easily to excite) may be inhibited and restrained. Moreover, since that the heat is wont to produce pain, let the Medicaments therefore be such as have in them a power withal of mitigating pain, or at least such as are altogether free from any such faculty of exciting pain; and therefore let them be such as want the drying and absterfiv power. Where-

fore those Medicaments are useful and proper that are made of the Juyce and Water of Roses, of Plantane, Endive, Vinegar, Saunders, Bole-armenick, Nightshade, burnt Lead, Cadmia, Sugar of Saturn, Oyl of Roses, Turpentine, Plantane Water often washed. Or else let there be administered, the Unguent of Roses, the cooling Unguent of *Galen*, the Unguent of Ceruils, of Nightshade, the Santaline Unguent, and the white Unguent. As for instance:

Take Oyl of Roses, Turpentine, Rose water, or Plantane water often washed, of each one ounce, Barly meal as much as will suffice; and make a Liniment. Or,

Take Lead burnt, and Pompholyx (both of them washed) of each one dram and half, Oyl of Roses, and Violets, of each one ounce and half, Wax a sufficient quantity; make herewith an Unguent.

The Cooling Medicaments may not only be imposed upon the very Ulcer it self, but likewise upon the parts that lie nigh unto it, and round about it. And therefore we may not only anoynt those parts with the aforesaid Unguents, but we may likewise impose the said Unguents upon them with a Swath-band that hath been first wet in the Juyce of Plantane, Lettice, or Nightshade, or the Decoction made of Myrtles, of Pomegranate rindes, Pomegranate flowers, Saunders, Plantane, Bolearmenick, and the like, adding unto the Decoction a sufficient quantity of sharp and slow Wine.

The hot Distemper being removed, the Ulcer (as it is wont to be done) is to be cured with Sarcoricks: which yet notwithstanding ought to be less hot and dry, lest that the hot distemper be called back again.

The Cold Distemper of the Ulcer requireth heating Remedies; such as are the Oyl of St. Johns wort, Oyl of Spiknard, of the Flowerdeluce, of Camomile, of Rue, of Dill, the Sirup and Honey of Roses, Rosin of the Fir Tree, of the Larch Tree, the Spirit of Wine, the Cerote of Betony. And indeed Liniments and Unguents made out of these are imposed upon the Ulcer it self. But externally, and upon the neer adjoining parts there are to be imposed Fomentations, made and prepared (together with a strong and generous Wine) of the Decoction of Sage, Hyssop, Wormwood, Organy, Rue, Mints, Bay Leaves, and Camomile flowers; or else let the said parts be anoynted all over with those hot Remedies even now mentioned; or else let the Cerote of Betony be laid thereon.

A dry Distemper requireth moisteners. And here water a little warm is of good use, if with it the Ulcer, or rather the parts neer unto the ulcer, be besprinkled or fomented. For albeit *Hippocrates* in his Book of ulcers teacheth us,

*The Cure of a  
cold distemper.*

*The Cure of a  
dry Distemper.*

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us, that we ought not to moisten universal ulcers, unless it be with Wine; and further addeth, that what is dry cometh neer unto that that is found, and that that is moist cometh not nigh unto it; and although *Galen* in his third Book of the Method of Physick, and Chap. 4. and in his first Book of the Composition of Medicaments according to the kinds, and Chap. 6. writeth, that no moistening Medicament is fit and convenient in the Cure of ulcers, and least of all Water: yet nevertheless, these things are altogether to be understood of an ulcer, as an ulcer; for the which Moisteners are no waies useful and proper. But if there be conjoynd with the ulcer a dry Distemper that hindereth the Cure thereof, then (the Cure of the ulcer being as it were left for a while) we ought to apply Remedies unto the dry Distemper, until such time that we find that the part affected hath recovered its pristine due temper.

And lastly, a Moist Distemper sheweth us that drying Remedies must be made use of. And because that an ulcer doth otherwise require!

drying Medicaments, therefore the Sarcoticks that we here make use of ought to be stronger than in a simple ulcer: and such are, the Roots of sweet *Cyperus* (or English Galangal) Horehound, the Spume or froth of Silver, burnt Lead, Chalcitis, the drossie scales of Iron and Brasse, and such like; out of which Medicaments are to be provided fitting and proportionable unto the greatness of the distemper of every ulcer. For by how much the moister the ulcer is, by so much the more forcibly and strongly drying ought the Remedies (that are required) to be. And on the Contrary, if the ulcer be but little or nothing moist, then the Remedies that we administer ought to be more mildly and gently drying; which is done by adding unto the stronger sort of them, Oyl, Rosin, and Wax. For by how much the more there is of these added unto the former drying Medicaments, by so much the more is their drying faculty and power abated and weakned; and by how much the less, by so much the more strong and entire doth their drying faculty remain. The ulcer may first of all be washed (for the cleansing away the filth and nastiness thereof) with Wine, or *Posca*, in which Astringents and Dryers (such as are sweet *Cyperus* Root, St. Johns wort, Wormwood, Rotes, Betony, and Sage) have been boyled: after this some of the aforesaid Medicaments may be strewed thereon; or else an unguent may be made thereof with Oyl and Wax, that without any warming at all may be extended and spread upon the Liniment (the Greeks call it *Emmoton*) and at last upon this we may likewise impose and lay on some hard Plaster, or Cerote. These Compounds and Emplastres are by *Galen* recounted in his first Book of the Composition of Medicaments, and Chap. 13. Now as for

*The Cure of a moist Distemper.*

the manner and measure of this humectation or moistening, let it be until the part begin to be lifted up, and to appear very red, and no longer; for we must then desist from any further washing and besprinkling it. For if we continue thus doing any longer, then that that hath been attracted will be dissipated. Now as for the manner how this warm Water is to be applied unto the part, it is threefold; and it is performed either by fomentation, or pouring it on, or by bathing therein. The Fomentation is performed with a Sponge, a Cloth, Hurds, or Cotton: and this Fomentation is the most commodious and convenient way of moistening the part affected. As for pouring the warm Water thereon, or bathing in it, we conceive not that it is any way so fit and proper. And it will be yet far better, if the part be fomented with Oyl and Water together blood-warm, rather than with Water alone, especially in the Winter time. For although warm Water may heat the part with an actual warmth; yet nevertheless, after the fomentation is past, it cooleth the part, and withal scattereth the heat; which is prevented by mingling Oyl therewith, for by this means the Pores of the Skin are obstructed. After the fomentation, let some Cataplasm that hath in it a Moistening faculty be laid on. As for example.

Take the Leaves of Mallows boyled to a softness, half an ounce; Barley meal, and Wheat flour, of each two drams; sweet Almonds bruised one dram and half; Honey boyled one dram, Saffron half a scruple, Swines fat as much as will suffice, Mingle them wel together in a Mortar, and make a Cataplasm.

Or else let the laid part be fomented with Oyl. Or else let an Unguent be made for it, of the Juyce of Mallows one part, sweet Oyl two parts, white Wax as much as wil suffice.

But if the Ulcer be dry, and the part lie under an Atrophy, so that the pouring of Water upon it wil not suffice, we must then (in the first place) do our endeavor in taking care that the sick Person may be nourished with meats that afford much good Juice, and which are easily distributed; that so there may be abundance of aliment administered unto the part affected; and moreover, if need require, it may be drawn unto the part, by the use likewise of those Oyntments we call *Dropaces*, or by any other waies and means.

The Distemper being removed, we are then to make use of Sarcoticks (and these indeed must be such as dry but little) lest that otherwise the part affected should again relapse into its dry Distemper, as *Galen* wel cautioneth us, in the fourth Book of his Meth. of Physick, and Chap. 1. and therefore together with these Sarcotick Pouders there ought to be added certain Fats and Oyls, and Wax. As,

Take Frankincense, and Mastick, of each one dram; Turpentine one ounce, Oyl of Roses one ounce

ounce and half, Wax as much as wil suffice, and make a soft Unguent.

#### Chap. 4. Of an Ulcer with the afflux of humors.

**B**ut very rare it is, that a Distemper happeneth alone unto an Ulcer; but for the most part, the Distemper is accompanied with matter, and the afflux of humors.

But now how many Causes there are of the afflux of humors, we have already told you, in the first Part, Chap. 1. touching Tumors in general. To wit, unto the exulcerated part there flow humors, either from the whole body, or else from some one particular part generating vicious humors; whilst Nature instigated and stird on either by the abundant store, or by the quality of the humor, expelleth and driveth them forth, and heapeth them up in the exulcerated part; or else when the part (by reason of pain, or heat) attracteth the humors; or when the humors do of their own accord flow down unto the part that is situated in a lower place; or else when they are any otherwise moved unto a weak and ignoble part: all which in what manner and by what means they may happen, we have acquainted you in the place before alleadged.

There is great variety of Excrements that cometh from the afflux of the Humors unto the exulcerated part. Galen in his Book of the times of the whol Disease, divideth these Excrements into *Sanies* and *Pus*. Celsus likewise in his fifth Book, and Chap. 26. besides the blood that is known unto al, determineth that likewise *Sanies* and *Pus* do issue forth from wounds and ulcers; and there he thus writeth: That *Sanies* is thinner than Blood; and yet variously thick also, and glutinous, and colored. *Pus* is most thick, and most white, more glutinous than Blood and *Sanies*. There issueth forth blood (saith he) from a wound that is recent and new made, or else that hath been of some continuance, and is now upon its healing. The *Sanies* is betwixt both these times. *Pus* out of an Ulcer that is now upon the very point of healing. Again, both *Sanies* and *Pus* have certain species or kinds distinguished by their Greek names. For there is a certain kind of *Sanies*, which is termed either *Ichor*, or *Meliceria*. And there is a *Pus* that is called *Elaïodes*. *Ichor* is thin, something white, and it issueth forth of a bad and naughty Ulcer, and especially when a Nerve being hurt, an Inflammation followeth thereupon. *Meliceria* is thicker and more glutinous, somewhat whitish, and not much unlike unto white Honey: This likewise issueth out of evil Ulcers, when the Nerves neer about the Joynts are hurt; and of al these places it especially floweth forth of the Knees. *Elaïodes* (which is thin, somewhat white, as it were anoin-

ted with a kind of fatness, and not much unlike unto white Oyl) appeareth in great Ulcers, that are upon the point of healing. Yet notwithstanding others there are that do otherwise use these names. Yet nevertheless, if we wil speak properly, *Pus*, with the Greeks *Puon*, is that excrement of the ulcer that hath its original from Blood, or from the flesh bruised and dissolved, and it appeareth in ulcers that are void of al other excrements, or such as have been just now cleansed from other excrements. Al the rest of the excrements that proceed from other humors, although they may be comprehended under the name of *Ichor* or *Sanies*; yet nevertheless the most do distinguish between *Sanies* and *Sordes*, and they cal the thin and watery excrements by the name of *Sanies* (which some do cal *Virus* or *Venom*) but the thicker excrements they cal *Sordes*; so that from the thin excrement the ulcer is rendered moist, and from the thick it is made fould and foul.

#### Signs Diagnostick.

\*Ulcers with the afflux of humors are known, First, by the Tumor or Swelling that appeareth not only in the lips, but likewise in the neer adjoining parts. And then (next of all) from the pain, which is very grievous and troublesome unto the sick Person, especially if the Nervous parts be affected. Thirdly, from the great store of excrements, which is far greater than what it was wont to be, proportionably according to the magnitude or bigness of the Ulcer. And lastly, albeit there be likewise administred all things that are necessarily required unto the Cure thereof, yet we find the Cure of them very difficult; in regard that the flowing humors hinder the Cure.

#### Prognosticks.

1. All Ulcers (as we said but now) with an afflux of the humors are very hard to cure; in regard that from the afflux of the humors the Ulcer is rendered moist, gains growth and increase thereby, swelleth up, and the pain is likewise hereby excited.

2. But by how much the afflux of the humor is the greater, and by how much also the humor that floweth thereto is the worse, by so much the more difficult will it be to Cure the Ulcer.

#### The Cure.

First of all therefore, in regard that the Ulcer cannot be cured unless the Flux be removed, therefore the Flux it self, with all its Causes, is to be taken away; and thereupon, whether in the whole body, or else by the default and something far amiss in the Liver, or the Spleen, the vicious humor be generated, the generating of it is to be hindered and prevented, and so much thereof as is already flown in is in a convenient manner to be prepared

prepared and evacuated; touching which very thing we have already elsewhere spoken at large. Moreover, lest that the humor should flow unto the affected part, it is to be drawn back, intercepted, and driven back. Among the Revulsive Aids and Remedies, in the first place we esteem and account of Issues that are made in the contrary part; because that the Humor that floweth unto the part affected, they evacuate and empty it forth by some other place. And these Issues are indeed oftentimes very necessary in old inveterate Ulcers. For when Nature hath been now of a long time accustomed to evacuate the vicious humors by the exulcerated part, if the ulcer be altogether closed, and that there be any of the vicious humors heaped up there, it may easily then come to pass that these humors regurgitate and flow back again into the Veins, and so rush into some more noble part; but al this may be prevented by a Fonticle or Issue.

But the aforesaid Defensives do intercept; which are to be imposed above the exulcerated part, in the sound part, toward the root of the Vessels, in those places where the Veins being bigger do appear more conspicuously; which said Vessels (through which the humor floweth) they strengthen and shut up, and withal drive back the humor. And they are formed out of those Medicaments that are dry and astringent; such as are, Bole-armenick, Dragons blood, Flowers of Red Roses, Pomegranate flowers, the Rinds of Pomegranates, Myrtle, Allum with the white of an Egg, Oyl of Myrtle, Oyl of Roses, austere or sharp Wine, astringent Waters: Out of which Cataplasms or other Medicaments are prepared.

But then unto the part affected it self Repellers are to be applied, that so the Humors that do as yet fluctuate in the Vessels of the affected part may be repelled. And therefore the exulcerated part, of the parts neer unto it, are to be washed with Allum Water, the Water or Decoction of Plantane, of Roses, of Pomegranate flowers, the Roots of sweet Cyperus, Cinquefoyl, and the like: but the neer adjacent parts are to be anointed with the unguent of Bole. And in the middle of the Ulcer there is a drying Pouder to be laid on, of Licharge, Tutty, Lead, Corals, Bole-armenick, Chalcitis, the white unguent of *Rhasis*, and unguent Diapompholyx. In a word, the Sarcoticks ought here to be stronger than in the simple ulcer that is not pestered with this flux, that so they may thoroughly dry up the humor that sticketh in the pores of the parts; and yet nevertheless they must be such as are without any mordacity at al, that so there may be no pain excited. As,

Take Turpentine one ounce, the Suet of a Bull half an ounce, burnt Lead an ounce, Tutty prepared half an ounce: Mingle them, &c.

But yet nevertheless, if the matter be crude and biting, some Frankincense is to be added, to fur-

ther the Concoction of the humor.

Touching the form of the Medicaments this is to be observed, that they be not of a moist consistence, nor Oily and fat, in regard that they do more loosen and moisten the part, as *Galen* tells us in his first Book of the Composition of Medicaments, Chap. 6. and in his fourth Book of the Composition of Medicaments, Chap. 1. & 13. And yet nevertheless, we are not alwaies to persist in one and the same kind of Medicaments. For it oftentimes so happeneth that what did once or twice do good, may afterwards (the humor being any waies dried up) prove prejudicial and hurtful, by exciting a mordication or biting; and there the Medicament is then to be changed, and one more gentle to be administered in the place thereof.

After that the ulcer is filled up with flesh, the Cicatrice is at length to be brought over it by E-puloticks.

*Guido* in his Tract. 4. Doct. 1. Chap. 2. upon such ulcers as these, adviseth us to lay on a thin Leaden Plate with a hole bored through it. For Lead being thus beaten into a thin Plate cooleth, and theretore is of special use in such like ulcers, if a fitting Ligature be added; in regard that it presseth forth the humor out of the part affected, and hindereth the influx thereof into the part ex-ulcerated.

### Chap. 5. Of the sordid, putrid, and corroding Ulcer.

**T**He moist ulcers that are accompanied with an afflux of Humors are for the most part thereby made sordid and foul (such as the Greeks call *Rupara*) to wit, if that thick and strotty excrement (which in special they call *Sordes*) flow forth; and putrid, if the said excrement breath forth a grievous and noysom smell, like unto that of a dead Carcass. For sordid and putrid ulcers (as *Guido* in his Tract. 4. Doct. 1. Chap. 3. telleth us) differ only in degrees, viz. in this, That the one is such in a greater, the other in a less degree. For if the excrements of the ulcer be simply thick and sordid, then we call it a sordid ulcer; but if they likewise receive a putridness, insomuch that they putrefie and corrupt the flesh that lieth under it, and also the softer parts, so that there breath forth from thence a noysom and unsavory vapor, then it is called a putrid ulcer.

#### The Causes.

The nighest Causes of this ulcer are depraved humors, malignant, and such as receive an extra-neous and moist heat and putridness. And indeed these humors either they flow unto the part affected from some other place, or else they become such in the very part it self, by reason of some distemper or debility in the said part, or by reason



reason of the unseasonable use of moist, and unctuous, and Emplastick Medicaments; or by reason of the administering thereto those Medicaments that were too weak in drying, and omitting those Dryers that were required. And on the contrary, likewise, the same ulcers are made sordid, by reason of overstrong Absterfives, that even melt and dissolve the sound flesh.

And sometimes the humor acquirèth so great an acrimony, that it corrodeth not only the exulcerated part, but likewise the sound part lying neer unto it, and from day to day creepeth wider and broader; and these ulcers are termed Corrosive, Creeping, and Devouring Ulcers.

### Signs Diagnostick.

Sordid ulcers are easily known by the sight; when there appear in them in great abundance certain Impurities that are viscid and clammy; when the flesh is become flaggy and soft, and oftentimes groweth forth too far. If also there be added a putridness, and if there be perceived a grievous stinking smell, and such as is like unto that of a dead Catkiss. If the ulcer be corrosive and creeping, if an itching and pain be felt; and if the ulcer doth continually grow greater.

As for what belongeth unto the signs of the Causes; if the humors flow either from the whole body, or from any one part thereof, this will appear by those signs that we have already propounded in the precedent Chapter. If the part be weak, and distempered; this may likewise be known by signs of its own; and there will then be no appearance at all of any fresh and lively color in the part. If the Ulcer hath been made sordid and foul by the weakness of any Medicament, then the ulcer appeareth whitish, and that whiteness encompasseth about the whole ulcer, like unto a kind of Web. On the contrary, if the ulcer hath been made sordid by a too strong absterfivè Medicament, then the ulcer is made hollow, and afterward from day to day it becometh more red; and there floweth forth a fibrile Pus that is not much in quantity, but very hot.

### Prognosticks.

1. If by reason of the great store, and the thickness of these Sordes or impurities the transpiration be hindered, then there followeth the corruption of the part; and so of a sordid ulcer it afterward becometh a putrid and depascent or devouring ulcer.

2. If putridness be increased in the ulcer, at the length a Gangrene and a Sphacelus follow.

### The Cure.

In sordid and putrid ulcers there is first of all great care to be had in the course of Diet; and the body is to be purged from all bad and vicious humors. But upon them there is to be put Abster-

sive and cleansing Medicaments; such as are Muls, Salt Water, and those things that are made of the juice of Smallage, of Wormwood, Barley meal, of the bitter Vetch Orobus, Myrrh, and Honey of Roses. But more especially the Spirit of Wine doth exceedingly benefit in the purging and cleansing of all putrid ulcers; which is therefore to be mingled together with the other Medicaments. As,

Take *Lignum Guajacum*, and the Rinds of the same, of each one ounce; the Root of long *Aristolochy*, the lesser *Centaury*, *Wormwood*, and *Agrimony*, of each one handful; the Rind of the *Frankincense* tree, *Myrrh*, of each half an ounce: boyl them all in a sufficient quantity of Wine; unto the straining add of Honey scummed four ounces, the Spirit of Wine one ounce: mingle them, &c. Or,

Take the Root of long *Aristolochy* one ounce; *Wormwood*, *Centaury* the less, *Agrimony*, of each half a handful; boyl them in Wine. Unto the straining add the flour of the bitter Vetch Orobus half an ounce; the powder of *Mirr*h two drams; *Honey of Roses* two ounces; Spirit of Wine one ounce; Turpentine as much as will suffice to make a Liniment.

If the ulcer be become sordid by the alone use of Unctuous and Oily Medicaments, and if there be no other more grievous cause of the foulness and nastiness thereof, then the milder and gentler sort of Absterfivè Medicaments may suffice: for the drier sort of Medicaments being administered, the ulcer is easily cleansed.

But if the ulcer be become sordid and foul from the use of Medicaments that were overstrong, then the milder are to be imposed; such as are the unguent *Diapompholyx*; the stronger sort of them are, unguent *Apostolorum*, and the *Ægyptiack* unguent. Or,

Take the Decoction of Barley one pint; Honey of Roses two ounces, mingle, &c. Or,

Take Turpentine and Honey of Roses, of each half an ounce; Meal of Barley, and of the bitter Vetch Orobus, and *Mirr*h, of each one dram; Powder of Flowerdeluce root half a dram. Or,

Take the Juice of Smallage, and Wormwood, of each one ounce; of the meal of Barley, of the bitter Vetch Orobus, of each one dram; Turpentine one ounce; *Mirr*h two drams; Honey one ounce, and mingle them, &c. Or,

Take *Agrimony*, *Centaury* the less, of each half a handful; boyl them in Wine: unto the straining add the juice of Smallage two ounces; Honey of Roses one ounce; the meal of Barley, and of the bitter Vetch Orobus, of each one dram and half; Turpentine washed in the Spirit of Wine, two ounces; mingle them: and make a Liniment.

If the ulcer be putrid, it is to be washed with Oxycrate, Ley, Brine; and upon them there are

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to be imposed Medicaments made of the meal of the bitter Vetch Orobus, the root of long Aristolochy, Squills boyled in Wine, and mingled with Honey.

But the hollow Ulcer that is sordid and putrid, is to be anoynted with the Unguent of Bolearmenick, or some other Cooler, lest that there be an afflux of humors excited from the use and biting quality of hot Medicaments.

If the putridness be greater, so that there be cause to fear lest that the part it self may be corrupted, then we are to make use of the stronger sort of them, which shall be hereafter declared and set down in the Chapter of the Gangrene and a *Sphacelus*.

And lastly, if the Ulcer be Corrosive, and that the sound parts be likewise corroded; then that that is corrupted ought to be taken quite away, either by incision, or by Caustery (whether actual or potential, it matters not much) until that at length we come to the sound flesh, and that the sound and quick flesh be separated from that which is corrupt and dead. But as touching these things we shall speak further hereafter in that that followeth touching *Phagedena*, and a *Gangrene*, and *Sphacelus*.

## Chap. 6. Of an Ulcer with Tumors.

FROM the afflux of humors unto the ulcerated part there is not only a Distemper generated, but there oftentimes likewise happen Tumors.

### The Causes.

Now the truth is, that there is no other Cause of these Tumors then what hath been before expressed and explained, touching an Ulcer with the afflux of humors, and above in the first part of Tumors. But now according to the diversity of the flowing humors, such is likewise the diversity and variety of the Tumors that are excited, to wit, an *Inflammation*, an *Erysipelas*, *Oedema*, and *Cancer*. But what humors they are that excite those Tumors hath been above declared, where we spake of Tumors.

### Signs.

What kind of Tumor this is, and what danger it produceth and threateneth, appeareth likewise sufficiently from the places alleaded; neither is there any need at all that we repeat any thing here of what was there said.

### The Cure.

The way, Means, and Method of Curing it was there likewise declared; which is yet nevertheless here in such manner to be instituted, that the Ulcer may not in the least be neglected. If there-

fore either the Blood offend in its quantity and overgreat abundance, or else if vicious humors abound in the body, these are first of all to be evacuated. In the next place regard is to be had to the very part affected. After this, Medicaments are to be applied unto the place affected, which may either discuss the humor that is the Cause of the Tumor, or else convert it into Pus.

And therefore in an Inflammation there ought to be applied a Cataplasim made of Quinces boyled with the Powder of Myrtle, or of boyled Lentiles, with the Meal or flour of Barly, Pomegranate rinds, and red Roses. In the augmentation of the Ulcer there must be added Camomile flowers, and Bean meal. In the State, Mallows, Marshmallows, the meal of Linseed, and of Fenugreek. As,

Take Barley meal two ounces, the powder of Camomile flowers one ounce, the meal of Linseed and of Fenugreek, of each six drams; and make a Cataplasim.

If the Tumor tend toward a Suppuration, the Suppuration is then to be helpen on with a Cataplasim of Mallows, Marshmallows, Linseed, Fenugreek, and Wheat, and other such like Ripeners. As,

Take Mallows, Marshmallows, of each one handful; boyl them in Water until they be soft, and then bruise them well: When they are bruised, then add of the flour of Linseed, and Fenugreek, of each one ounce; Wheat flour half an ounce, Swines fat and Oyl of Roses, of each one ounce, and Mingle them.

If an *Erysipelas* be joyned together therewith, externally, and in the neer adjacent places, those Medicaments are to be imposed that we have above propounded, in the first Part, and Chap. 7. touching an *Erysipelas*. There is here very usefully imposed upon the external parts the water of Elder flowers, and Nightshade. We add this only, that sometimes it so happeneth, that (as in an *Erysipelas*) if it be not rightly Cured, and if such things shall be rashly and unadvisedly administered that obstruct the Pores, so that the humor can by no means pass forth, nor be dissipated, or that there be caused an overgreat afflux of humors, Pustules oftentimes, yea and greater blisters and bladders are excited in the affected part; out of which when they are broken, there issueth forth a warty *Sanies*, and the part is afterward exulcerated; and unless it be rightly handled, the Affect soon degenerateth into long continuing and malignant Ulcers (especially in the Thighs) yea and oftentimes into a very Gangrene it self. Which if it should chance so to happen, it will then be very requisite to make use of Coolers, Driers, and Astringents together. As,

Take Plantane Leaves one handful, flowers of red Roses half a handful, boyl them to a softness, and then let them be bruised; when they are bruised and passed through a Hair-sieve, add of Barley

*Barley meal one ounce and half, the powder of Pomegranate flowers half an ounce, with the oyl of Roses make a Cataplasim.*

That that is here especially useful and profitable is the Unguent *Diapompholyx*; unto which (if you please) you may yet further add some Sugar of Saturn.

If the Tumor be cold, then such a like Cataplasim as this may be imposed.

Take the Leaves of *Mallows*, *Marshmallows*, of each one handfull; and boyl them in *Ley* unto a softness, and then bruiſe them wel; then add the powder of *Marshmallow* root one ounce and half, *Camomile* flowers ten drams, *Oyl of white Lillies* as much as will suffice, and so make a Cataplasim.

If a Cancer be joynd with the Ulcer, there can then be no other Cure more fit and proper then that we have already propounded, touching an ulcerated Cancer.

The rest of what might here be spoken touching these may be seen, if they be sought for in the first part, touching Tumors.

### Chap. 7. Of proud flesh growing forth in Ulcers.

It happeneth oftentimes, that in Ulcers there is found proud flesh, and such as groweth forth further then what is fitting; which Malady the Greeks term *Hyperfarcosis*; which whensoever it happeneth, it hinderech that the Ulcer cannot possibly be shut up with a Cicatrice.

#### The Causes.

Now this happeneth either from the abundance of blood that floweth unto the part affected; or else by reason that the Sarcotick Medicaments that had been administrated were overweak, and less drying then what was fit. If the former of these be the Cause, then the flesh it self will be in a right temper, only there will be too much thereof. If overmuch flesh proceed from the latter of the two Causes, then the flesh will not be sound and solid, but loose and Spungy.

#### The Cure.

As for what concerneth the Cure, if the first happen, fasting and sparseness of Diet is then to be enjoyned unto the sick Person, and dry Medicaments are to be imposed. But if the flesh begin to grow proud by reason of the use of Sarcotick and detesive Medicaments that were in their own Nature overweak, then we ought to make use of the stronger sort of Deterſives, and such as produce a Cicatrice; and if there be occasion, even seprick Medicaments likewise. And such are, a Sponge burnt, dry Liniments imposed, the rind of *Frankincense*, *Galls*, *Aloes*, *Turkey*, and burnt *Alum*.

And indeed in the Toes, when by reason of the

compression of the excreſcent Nails the flesh beginneth to be luxuriant, so that a man can neither put on his Shoes, nor go without pain, then burnt *Alum* alone (sprinkled thereon will take away the said flesh. The stronger Medicaments, are, the rust and scouring of *Brass*, *Chalcitis*, *Mercury* precipitate, *Mercury* sublimate. And therefore whensoever there is need but of little drying, then let there be imposed dry Liniments, or else such as have been soaked and wel wet in this following Decoction.

Take *Galls*, the rinds of *Frankincense*, and *Maſtick*, of each one dram; *Flowers of red Roses*, *Pomegranate* flowers, and *Rue*, of each half a handfull, *Alum* two drams; boyl them al in *Wine*. Or,

Take *Galls*, *Pomegranate* rinds, a *Sponge* burnt, of each alike; and make a Powder to be strewed thereon.

There is more especially useful this green water following, which being besprinkled upon the luxuriant flesh, or else imposed thereon by Liniments, it taketh away the said flesh without any pain at all, and generateth a Cicatrice.

#### The Green Water.

Take *Alum Crude*, and *Green*, of each two drams, boyl them in eighteen ounces of *Wine*, until a fourth part be wasted; then strain it; and then take *Camphyre* one dram: dissolve it in one ounce of the Spirit of *Wine*, and add it unto the former.

#### The stronger are these:

Take *Plantane* water, and *Rose* water, of each five ounces. *Mercury* sublimate one dram; let them boyl, and then strain them through a thick *Linen Cloth*. In the straining let the Liniments (being cut into divers pieces) be laid to soak, or the *Linen Cloth*; and let it be again thoroughly dried, and reserved for use. Or,

Take *Galls*, *Pomegranate* flowers, of each one dram; *Dragons* blood, *Ceruss*, the rust of *Brass*, of each half a dram; burnt *Alum*, *Frankincense* and *Myrrh*, of each one dram; Make hereof a Powder.

### Chap. 8. Of an Ulcer that is wan, and Callous.

It sometimes so happeneth that the lips of the Ulcer are, made hard, wan, and Callous. Now this is caused by those things that dry overmuch, or by the cooling of the externall Air, or by the afflux of hot humors.

But from what cause soever it happen, the Ulcer cannot be cured, neither can it be closed up with a Cicatrice, unless that hardness be first taken away, and the exulcerated part be reduced unto its natural state. And therefore if the hardness be less, then Emollients and Discussives are to be made use of, such as are of the Mucilage of *Linsfeed*,  
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of Fenugreek, Oyl of sweet Almonds, Oyl of Earth-worms, the fat of a Hen, and the fat of Ducks, &c. As,

Take the Mucilage of the seed of Marsh-mallows, of Fenugreek, of each two drams; Turpentine one ounce; Oyl of sweet Almonds, and of white Lilies, of each three drams; Wax as much as wil suffice, and make a soft Unguent.

The simple Diachylon Emplaster is likewise here very good, and of singular use.

But now if the hardnes be greater, and that it yield not, neither give way unto Emollient and Dissolutive Medicaments, after what manner such a like ulcer ought then to be cured, Galen teacheth us, when in the fourth Book of his Method of Physick, and Chap. 2. he thus writeth: *When the lips of the Ulcer (saith he) are only somewhat discolored, or made a little harder than ordinary, they are then to be cut out even unto the sound flesh. But whenas this Affect hath made a further progress, then it falleth under deliberation, whether al that which is seen to appear preternaturally be to be cut forth, or else rather in time, and as soon as may be to be cured. And it is without doubt, that in this case the will and mind of the Patient is to be consulted and followed. For some of them had rather be cured without being cut, though it be a long time first: Others again there be that wil be content to undergo any pain or hardship, so that they may be soon and suddenly cured.* For such like ulcers are most speedily (yea and most commodiously likewise, and fitly) cured, if the hard and wan flesh be cut forth (even unto the sound) with a fit and convenient Instrument. For both the pain is shorter, neither is there any bad and hurtful quality introduced into the part, as there is by corroding Medicaments. For the hardnes thereof is likewise very fitly wasted and removed by an actual Caustery.

But if the sick person wil endure neither incision, nor burning, the hard flesh is then to be wasted away, and consumed by such like corroding Medicaments as we have elsewhere propounded. The green Water that we described in the foregoing Chapter is likewise of singular benefit; and so is the Pouder also there mentioned. The Oyl of Vitriol is one of the stronger Remedies.

Yet nevertheless, we must be very cautious how we use the stronger sort of Medicaments in the Nervous parts: and Defensive Medicaments are to be applied unto the neer parts, lest that there be a pain excited, and a new afflux of humors caused.

If the lips of the ulcer be leaden colored, wan, and black, they are then to be scarified, and the viscid blood is to be drawn forth: afterward a dry Sponge is to be laid thereon, and at length drying Medicaments, as the green Water, or the

Pouder described in the precedent Chapter, or the like Medicament.

### Chap. 9. Of Ulcers that are hollowed and furrowed.

IF Pus and Sanies be long contained in the Apostem, or Impostume, and shal in its own nature be sharp, or else shal become such by its long continuance there, it then maketh (as it were) Conney-burroughs, and formeth a hollow nook, by the Greeks called *Colpas*. But touching these nooks and furrows (in regard that we have already spoken thereof above, in Part 1. Chap. 6.) it wil be altogether needless here to add any thing more unto what hath been there delivered. Only we shal yet here acquaint you with some few things by way of Advertisement. The first is this, That hollow and furrowed Ulcers may not only be so bred, but the sinuous and nooky ulcers may oftentimes likewise succeed wounds; which especially happeneth by the negligence of the Chirurgeons, and this very frequently chanceth in the Thighs. For if such like places where the Muscles are larger the wound be not so ordered that the Pus may be expelled forth by the orifice of the wound, it then by its weight descendeth according to the guidance of the Muscles, and there raiseth furrows and Conney-burrows (as the Latine Physicians term them) and more especially if it hath been long detained, and be thereby become sharp and corroding. And in such a like ulcer, since that al the Pus can hardly be expelled forth by the Ligature that is toward the upper Orifice, it wil therefore be necessary to open a Sinus or nook in the lower part; which being done, and a way and passage made for the issuing forth of the Pus, such wounds are afterward easily cured.

And therefore in the second place it is to be noted, That we are to use such an expressive Ligature (lest that, whether in Wounds or in Ulcers Fistula's be generated) to wit, which beginneth from the very bottom of the wound or ulcer, and endeth in the orifice thereof; this notwithstanding alwaies provided, That by how much the neerer it approacheth unto the Orifice, by so much the looser ought it to be.

Thirdly, You are to be hereof admonished, That in regard such like sinuous ulcers become sordid and foul, for the most part, that therefore the Spirit of Wine is very fitly mingled together with other Medicaments, because it hath in it an excellent property and vertue to cleanse and purifie such like ulcers as these. *Franciscus Valeriola* hath a singular and happy way of Curing this dangerous nooked or furrowed ulcer, in the fifth Book of his Observations, Obser. 1. and another in the same place, Obser. 7. where they may both be seen. But yet nevertheless I hold it

not amiss here to acquaint you with those Medicaments he there maketh use of; for as for Section (or cutting) he would not for many reasons by any means allow of, or appoint it. First of all (saith he) after Universals, and a special regard had unto the whole body, we coming unto the cure of an Ulcer in one that was extremely afflicted therewith, found (in regard that it was fordid and foul, and hollow, and sinuous) that it wanted cleansing and filling up. But in regard that the Cavity could not be filled up, without first cleansing the Ulcer, therefore the Ulcer was first of all to be cleansed and purified: for an Ulcer can neither be filled up, nor agglutinated, unless it be pure and clean, as Galen tells us. And therefore to cleanse away the thin Ichorous excrements and impurities (with which the Ulcer was extremely pestered) we proceeded in the use of many several Remedies, still proceeding from the weaker unto the stronger.

Take the Decoction of whole Barley one quart; Honey of Roses six ounces; mingle them, and make an injection thereof into the inside of the Ulcer with a straight Syringe or injection pipe; this without any mordacity at all cleanseth and washeth away the filth and pollutions of those thin ichorous excrements of any Ulcer. But when we had discovered that there was present much both thick and fordid Sanies, we then found that there was great need of a stronger cleansing. And thereupon we made use of this other stronger and more prevalent Remedy, to wit, mingling therewith the aforesaid Egyptiack Unguent, and withal mingling a small proportion of Aqua vitæ, viz. Two ounces. Sometimes, and after some certain daies when we had made use of this second Decoction, and yet had not sufficiently gained our desire as touching the detersion and cleansing of the Ulcer, we then thought good to make use of this notable and effectual Injection.

Take Lignum Sanitum powdered very small, and the bark of the same Wood, of each two ounces; long Aristolochy, Centaury the less, Wormwood, Agrimony, Horstail, Olive Leaves, Myrtle Leaves, Pimpernel, and the greater consound, of each one handfull; the rinds of Frankincense, Myrrh, and Sarcocol, of each half an ounce; sweet-scented red Wine three pints; Honey scummed four ounces; let there be a decoction of them all, of the straining make an injection within the Ulcer, at the very time of injection add thereto one ounce of the best Aqua vitæ for every dose, or as often as you administer the Decoction. Whereby it may this is worthy your taking notice of, and we then found it by observation, that the Aqua vitæ (together with the aforesaid Decoction) is most powerful and most efficacious in cleansing fordid Ulcers that are without biting, and in thoroughly drying of them, and in promoting the agglutination and soldering thereof. But if together with the aforesaid Decoction you add of

the best Aqua vitæ one quart, and so desfil them in a Glass Alembick, in Balneo Mariæ, there is from thence a most admirable Liquor to be extracted and drawn forth, both for the cleansing of all fordid and hollow Ulcers, as also for the agglutinating and closing of them up: which we at that time frequently found by experience. For truly great and admirable is the power and efficacy of Aqua vitæ in the cleansing and glewing together again (as it were) of Ulcers, and especially those of the Nervous parts (as we then discovered by dayly experience and observation) so that we know nothing that is better for that purpose. But when the time was come that we thought fit to restore in the Ulcer the flesh that was lost, we then made use of this other injection; the virtue and faculty whereof is, both moderately to cleanse, and to fill up the Cavity with flesh; whereupon it may deservedly be stiled a Sarcoid Remedy.

Take Plantane Leaves two handfulls; Agrimony, Herb Robert, Cinquefoyl Leaves, of each one handfull; the tops of Wormwood, in number three; of both the Consounds, Horstail, Cetrach (or Spleenwort) St. Johns wort, of each half a handfull; Betony one handfull; make a Decoction in water: in the end of the Decoction add of red astringent Wine one quart, the Leaves of red Roses, and Myrtle Leaves, whole Barley, of each two pugils or small handfulls; take of the straining two quarts: unto which add, Bean meal one ounce, of the bitter Vetch Orobus half an ounce, Frankincense, Mastick, Sarcocol, Rosin of the Pine-tree, of each one ounce; Myrrh, round Aristolochy, of each six drams; Flowerdew of Florence half an ounce, Honey of Roses four ounces; mingle them, and of this Liquor make an injection within the Ulcer; for it justly cleanseth and generateth flesh, as we may perceive by the Nature of the Ingredients; and so the event taught us. After the injection within the Ulcer, we then very commodiously made use of this following Unguent, with tents, Spleen-like long Plaisters, &c.

Take Juice of Plantane four ounces; Agrimony two ounces; Wormwood one ounce, red Wine four ounces; Oyl Ombudine of Roses one pint: boyl them together unto the consumption of the Wine and the Juices; in the end thereof adding of Bean meal two ounces and an half, of the bitter Vetch Orobus one ounce and half, of Frankincense, Mastick, Sarcocol, Rosin of the Pine-tree, of each one ounce; Choyce Myrrh, Flowerdew of Florence, and round Aristolochy, of each half an ounce. Turpentine washed in white Wine three ounces, Honey scummed four ounces; Wax as much as will suffice: make an Unguent; with the which after that we had caused Liniments to be filled, we then ordered and appointed them to be imposed upon the part affected.

After



After the cleansing of the Ulcer was perfectly finished, we then with very good success made use of this Sarcotick Powder likewise within the Ulcer :

Take Eleſt and choyce Aloes two drams ; Frankincense, the Rinds of the same, Myrrb, and Sarcocol, of each one dram ; Roots of the Florentine Flowerdeluce four scruples : make of all these a most ſmal and ſine Powder, and apply it unto the hollow Ulcer, to fill up the Cavity thereof.

But we likewise (after those aforesaid Remedies) thought good to make use of a drying Fomentation, fitted for the Ulcer, and such as was very requisite and proper for the producing of the Cicatrice.

Take the Leaves of Plantane two handfuls, Wormwood half a handful, the Leaves of the Olive, of the Mastick or Lentisk Tree, the tops of the Bramble bush, of each one handful, the Leaves of Betony half a handful ; the Flowers of Camomile, Melilote, St. Johns-wort, Sticbard, Cassidony or French Lavender, red Roses, Rosemary flowers, the Leaves and Grains of Myrtle, of each one handful ; boyl all these in a sufficient quantity of Water ; and add in the end of red astringent Wine one pottle : make a Fomentation herewith for the part affected, and apply it twice a day. But when as this had first of all appeared plainly to be less effectual than was expected, and not to be sufficiently helpful ; we then made use of this other that followeth. Viz.

Take Centaury the less one handful ; red Roses one pugil and an half ; Myrrb grossly powdered three drams ; Roch Allum one ounce ; boyl them all together in thick red Wine for a fomentation ; and then let them be filtatred, and hard pressed, according to the usual manner.

An Astringent and Epulotick Injection followed upon this Fomentation.

Take the Leaves of Plantane, of new Ivy, the Flowers of red Roses, of each one pugil ; the grains of Myrtle shaken wel together one pugil and half ; the Leaves and Flowers of Centaury the less, of each one pugil ; Roch Allum one ounce ; Pomegranate Rinds one ounce and half ; let them boyl all together in red Wine, and then strain them. Of the straining we ordered them (with a straight Syringe, Squirt, or Injection pipe) to cast into the Ulcer, the Ulcer being first of all thoroughly cleansed and purified : which cleansing was indeed wholly effected and wrought by the fore-ordained Injections, but more especially likewise (and most speedily) with this following Unguent ; for it hath an admirable and excellent virtue in the cleansing of Ulcers from all their thin leborous excrements and impurities : the Ingredients that it consisteth of are these that follow :

Take Juyc of Smallage half a pint (this is

admirable in cleansing of Ulcers) the best Honey four ounces ; Barley meal two ounces ; of the bitter Vetch Orobis half an ounce ; Choyce Myrrb two drams ; Turpentine one ounce and half ; let them be boyled all together, and make an Unguent ; in which let Linen Rags be wel wet, and then put into the Cavities of the Ulcer ; it purgeth Ulcers most excellently, and without any biting at all.

For the filling up of the Ulcer with flesh, we made use of this following Emplaster :

Take Litharge of Gold six ounces ; Oyl of Roses Omphacine one pint and half ; Vinegar of Roses half a pint ; boyl them together with a gentle fire (continually stirring them about with a Spatter) until they shal have gotten a blackish color, and the consistence or thickness of soft Bituminous Clay, and a Cerot. Make a long Roller-like Emplaster, of which make an Emplaster fit for the Ulcer, and lay it upon the Ulcer. But in the end and conclusion of the Cure, we made use of the Emplaster Diabalcinis with the Emplaster of Diapompbolyx : in the curing of which so great and hollow an Ulcer (after the thoroughly cleansing of the same) we found by good experience, that there was nothing could be better and more available then the applying of pillows or bolsters (a little thicker than ordinary) round about the said Ulcer ; and so binding these bolsters on very hard strongly to press down into the flesh lying underneath that other flesh that lay gaping far disjoyned from it : for (as Experience then taught us) this (if there be anything that will do it) doth most especially procure agglutination and sodering together.

## Chap. 10. Of Fistula's.

Fistula's differ from a Sinuous and furrowed Ulcer only in this, to wit, That they are moreover callous and hard ; and therefore here after sinuous Ulcers we think it fit to treat of Fistula's. If the Sinus or nook be not speedily cured, the Pus wil moreover cause furrows, such as we usually term Coney-burrows ; and the part wil contract a callousness, or thick insensible brawniness ; and it wil become so hard that it can by no manner of means be agglutinated and united again unto the parts lying underneath ; which Malady is after this called a Fistula. For a Fistula is a Sinus (nook, or furrow) narrow and long, or a Sinuous ulcer, that is (for the most part) narrow and callous ; and thereupon such as wil hardly admit of any Cure.

### The Causes.

But now these Fistula's for the most part have their original from Impostumes. For these (either by reason of the impurity of the body, or the too great abundance of naughty humors) if they

be permitted long to continue; or else if by the unskilfulness of the Physician they shal be over long delayed, and not wel cured, the *Pus* then causing the aforesaid Coney-furrows, they wil at length become very deep, and withal callous, and of an insensible brawny hardness.

### The Differences.

There is moreover of *Fistula's* very great variety and diversity. For of these some are profound and deep, others of them straight, and others lie transversely, and overthwart the flesh: again, some of them are simple, single, and alone, but others of them taking their rise and beginning from one and the same orifice are double, or even likewise threefold, or oftentimes they have very many *Sinus's*, or hollow nooks: and lastly, some of them tend unto and terminate in a Bone, others tend unto a Nervous part; and a third sort of them even unto the Veins or Arteries.

### Signs Diagnostick.

But now these *Fistula's* (in the general) are known especially by the Probe or Instrument that is conveyed into the *Sinus* (to discover the depth thereof) which how it tendeth and passeth along, and how deeply it penetrateth is easily seen and discerned. And withal when the searching Instrument is drawn forth, we may then easily learn, whether the *Fistula* be moist, or whether it be dry. But if it be oblique, so that the Instrument cannot pass along in a direct and straight manner, we then are wont to put in a little long plummer of Lead, or rather (which is much the better) a Wax Candle, that may be turned about any way. And moreover, that flesh that lieth round the *Fistula* appeareth to be white, dry, hard, and without pain; or else if there be any pain, it is very little and moderate, unless haply it be neer unto a Nerve; and the *Pus* that issueth forth is crude and raw, and sometimes likewise very stinking & loathsome. But now whether or no there be one, or more of these *Sinus's*, this is altogether to be discovered by the Probe or searching Instrument; which the *Pus* likewise that is now and then sent forth wil sufficiently evidence. For if there flow forth more *Pus* then what probably can be contained and generated in one only *Sinus*, or hollow Nook; or if when the sick Person removeth and changeth his seat, that *Pus* that before was stopped shal begin again to flow forth; this may be a sure and certain sign and token that there are here present more then one of the *Sinus's* and that the *Fistula* penetrateth very deep. But if there are more orifices of the *Fistula*, then we cannot so easily discover by the Instrument, whether there be one only *Fistula*, or more: but then by a Syringe, Pipe, or Squirt, liquor is to be injected by one orifice; the which liquor if it flow forth again by all the orifi-

ces then it isal but one *Fistula*: but if it issueh not forth at all the orifices, then there are more *Fistula's* then one. And this is likewise discovered by the colour of that that issueth forth: for if that humidity that floweth forth by all the orifices be of one and the same colour, it is then a sign that the *Fistula* is but one; but if it be of a different colour, it is then an argument that there are more *Fistula's* then one. But how far the *Fistula's* reach, and in what part they end, it may thus be known. If that which is touched by the Instrument be soft, and the *Pus* that floweth forth be white, and in great abundance, it then sheweth that the *Fistula* sticketh in the Skin alone. But if it penetrate and reach even unto the Nerve, then there wil be great pain perceived when the depth of the *Sinus* is searcht unto; and the *Pus* that is evacuated is indeed white, but then it is very thin, and in less plenty; and the action of that Member unto which the Nerve tendeth, is rendred more difficult. If it penetrate unto a Bone, there is then present a pain in the very time of making the tryal and discovery; and that unto which the lowest end of the searching Instrument reacheth is hard, and maketh resistance. And the Bone is then indeed found and perceived to be equal and smooth, if it be not as yet become rotten and corrupted; but if putridness hath seized even upon the Bone it self also, it then appeareth rough and unequal unto the touch; and the *Pus* flowing forth waxeth black, and is of a very ill favor. But if the *Sinus* reach unto a Vein, or an Artery, and this Vein or Artery be not indeed corroded and eaten through, then there is something issuing forth that is like unto Feces or Dreggs. For the Blood sweating through by the Pores of a Vein, or an Artery, is mingled together with the humidity of the Ulcer; and thence it is, that what floweth forth appeareth feculent, or dreggy. But if the Vein or the Artery be eaten through, then sometimes there wil blood break out, and flow forth: and this wil be very red, and with a kind of leaping or dancing motion, and with a tickling, if it come from an Artery; but more thick and dark, if it issue forth from a Vein.

### Prognosticks.

1. Simple or single *Fistula's* that are yet but new begun, which are in the fleshy parts alone, not deep, in young vigorous bodies, and such as are of a good Constitution, are easily cured; but more difficultly those wherein many parts are corroded, and eaten quite through, such as are old and inveterate, without any sense and feeling, deep, full of turnings, and having divers and different hollow Nooks; such as are neerly situate unto noble and principal Members; and when they are in old and decayed bodies, and such as abound with ill humors.

2. And so are those (in like manner) very dangerous, and hardly cured (or rather indeed altogether

altogether incurable) that reach even unto the heads of the Muscles, unto the Veins, unto the Arteries, unto the Nerves, the Bones, the Joynts, and the very Vertebrae of the Back; that reach and extend unto the Cavities of the Bellies, as the Thorax, or the Abdomen or Paunch; or even such as penetrate likewise unto the very Bowels themselves, as the Lungs, Womb, Intestines, and also unto the very Bladder itself. For why, such like Fistula's as these, either they wil not bear nor admit of any Medicaments, or it may happen likewise that the Medicaments cannot possibly attain and reach unto them.

3. Yea some certain Fistula's there are that indeed ought not to be cured; to wit, such as are old and inveterate, as having been of long continuance, and such as are removed from the noble parts, and such as by the superfluous and vicious humors have now of a long time been accustomed to be purged and emptied forth. For such like Fistula's as these (in regard that they preserve men from divers Diseases) are by no means to be closed up; because that when they are shut up they cause and procure very many Diseases; as Hippocrates hath it, in his sixth Book of Epidem. Comment. 3. Text 39. But on the Contrary, if they shal at any time chance to be closed and shut up, they are then again to be opened.

### The Cure.

Now the Cure of these Fistula's is twofold; one the true and perfect Cure; the other only palliative (as they call it) or imperfect, to wit, such as wherein the Fistula is dried up within, and consolidated without, the Sinus nevertheless stil remaining. Which kind of Cure Galen seemeth to hint unto us in his Book of Tumors, Chap. 4. where he hath these words. Yet nevertheless (saith he) the Sinus is freightned and closed together, as being thoroughly dried by the Medicaments; insomuch that the part may seem to have attained unto a soundness no way to be found fault with. For evermore indeed, if any one continually using an exact and accurate Diet cometh by this means to have his Body very healthful and sound, and very free from superfluities, the Sinus then remaineth restrained and kept in. But so soon as any superfluity is collected, and gotten together, it is again filled up; and so there appeareth to be again the same Impostume that there was from the very first; and so again it is evacuated (as is fitting) with Medicaments, and then it is dried, and by these means it is restrained and kept in; and all this is evermore done with much more ease unto the sick Party, then in those that have the Impostume newly begun in them. For neither do the parts that are so far divided and separated, yet feel, or are in the least sensible of pain: for now although they are far distant one from another, yet nevertheless they are very speedily filled up, the Sinus easily and soon receiving

that that floweth unto it. And the truth is, Hieronymus Fabricius ab Aquapendente is of Opinion, that this kind of Cure is not altogether to be despised, and contemned; For sometimes (as he writeth) this succeeded well unto him, although not alwaies. Now the Cure is performed, the body being first of all purged, and a fitting Course of Diet ordained; and afterwards the Tents and Fistula being taken away, and a new Spunge thoroughly soaked in a liquor that is strongly drying being applied and fast bound upon the place; such as is the water of hor Barbs, Ley, Lime-water, and the like. For by this means the mouth of the Fistula shutteth again together, so that the Fistula may seem whole and sound; which indeed somtimes by the benefit only and operation of the Native heat doth altogether coalesce and grow together again; but for the most part it remaineth closed up only so long as there are no superfluous humors collected and gotten together in the body, for after that there is any humor again gotten together in the Sinus, the Fistula is likewise again opened.

But now the true and genuine Cure of a Fistula is thus accomplished. Universals in the first place are not to be omitted, but a Diet is rightly to be instituted, and the body thoroughly purged from all superfluous humors; and especial care is to be taken, that there may no more of the humor flow in unto the part affected. Which being done, before we descend unto Topical Remedies, there be some that administer certain Potions that may dry the Interior parts, and strengthen them, and that may prepare the Fistula for Consolidation, and may thoroughly purge it. Of such like Potions Tragaultius hath described two: the former whereof is this.

Take Agrimony three parts, Plantane two parts, Olive Leaves one part; Cut them small, and bruise them well, and then boyl them in white Wine; let the sick Person drink hereof a small Cup full (three or four ounces) every day. Or,

Take Osmund (or Water-Fern) three parts, Gentian two parts, Centaury one part; boyl them in the same manner (as aforesaid) in white Wine; which Potion expelleth and driveth forth likewise Bones that are corrupted. Others there are that commend this Potion.

Take Sanicle (i. e. Bears Ears, or French Couflips) Mugwort, Speedwel, Saracen Confound, Winter-green, of each one ounce; Savine one ounce and half, Horf-tail half an ounce; boyl them in white Wine, and make a Potion; which if we wil at any time make stronger and more operative, we may then (in the drinking of it) unto each Dose add and mingle therewith half a scruple of Oculus Cancris (or the Crabs Eye) prepared.

For Savine, and Crabs Eyes, are of singular use and



and benefit in the expelling and driving forth of corrupted Bones, Pus, putrified Veins, and the like. Or,

Take *Saracen Confound*, *Sanicle*, *Speedwel*, of each one ounce; *Tormentil Root* half an ounce; *Avens*, and *Cardus Benedictus*, of each an ounce and an half; boyl them in Wine.

Afterward, before any thing else be done, we must do the utmost of our endeavor that the callous hardness and brawniness may be removed. But now whenas the narrowness of the orifice of the *Fistula* doth for the most part hinder the application of those Medicaments that are to be administered for the removal of the callous hardness, it is therefore to be dilated: which may be done either by fire, or by an Iron Instrument; or else more commodiously, and without pain likewise, by long sharp tents that are made of Sea-Sponge, the pichy substance of the Elder-tree, the Roots of Gentian, Aristolochy, Briony, or even likewise of the wild Rape thoroughly dried. For these things being formed into a Pyramidal figure, and put into the *Fistula* the sharp-pointed end downward, they soak up the humidity of the *Fistula*, and by this means they are rendered the thicker, and to by little and little they dilate and widen the orifice, without any pain at all. Which things are sometimes likewise soaked and anointed over with such Medicaments as are in their own nature fit to take away the callous hardness, when the callus hindereth the dilatation. For there ariseth a callousness (especially in the external orifice of the *Fistula*) to wit, in the very skin it self, it being such as easily becometh hard, and such as is made thicker than the flesh, that is softer, and easily receiveth in the excrements, and the humors that flow thereunto. Yet nevertheless the very flesh it self sometimes likewise getteth a callous hardness in the cavity of the *Fistula*. The callousness that is in the orifice of the *Fistula* is sufficiently apparent both unto the touch, and to the sight. But now whether there be any callousness likewise in the *Sinus* it self, this may be discovered by the searching Instrument. For when the Instrument is put into it, there is then perceived very little or no pain, and there is no blood at all issued forth, but there is a certain hardness perceived, if a *Callus* be present. Which if it be absent then there is a great pain excited, the blood floweth forth, and there is no hardness at all perceived.

But now wheresoever this *Callus* is, it is to be removed; which is done, either by Medicaments, or by Cutting, or by the Fire. But then likewise Medicaments are to be administered, sometimes such as are mild and moderate (and such are Emollients and Digestives) and sometimes again those that are stronger, and such are Detergives or Cleansers: and lastly, now and then also, the strongest sort of all, and such are Causticks. In

those that are but young, and in their youthful age, and that have their flesh soft and tender, these Emollients and Digestives only are sufficient, which do dissipate the said *Callus*, and the matter that is impacted and stuffed into the part that constituteth and causeth the *Callus*; unto which we may likewise (if there be occasion) add and mingle therewithal some of the Absterfive and Cleansing Remedies. And such are the ashes of Figs mingled with the fat of a Goose; the Decoction of Fern Root, of Agrimony, of Olive leaves, the great Diachylon, and the Unguent Apollorum. But for the most part there will be need of the stronger and more forcible Remedies, which by cleansing, or likewise by burning do waste and consume the aforesaid *Callus*. The stronger sort of Medicaments are, the Root of *Spondylium* (we usually call it Cow-parisep, or Meadow-parisep) peeled and pared round about, Asphodel Root, Snakeweed, Briony, the Decoction of Lupines, and especially (above all) the lesser Centaury. There are some likewise that make use of the Root of black Hellebor; and this they put for three daies into the *Fistula*. But *Antonius Chalmetens* pre-admonisheth us touching this Root, and he tells us that it is a very unsafe and dangerous Remedy, and especially if the *Fistula* be in any part of the *Thorax* or Chest. For when on a time he himself (as he saith) had once, and but once, filled with Hellebor a *Fistula* that was in the *Spina Dorsi*, neer unto the Region of the Heart, the sick person very often fell into fainting and swooning fits. Those things that are yet stronger, are, the Egyptian Unguent, Vitriol burnt, Vitriol precipitate, the Oyl of Sulphur, Trochisques of Minium, Chalcis, and that which by the Apothecaries is called *Misy*, and *Sory*; out of which there may be made Compositions for the present use. *Celsus* in his fifth Book writeth that this following is found by good trial and experience to be of singular use; and *Paulus Aegineta* doth the like also in his fourth Book, Chap. 49. in which place we may see more hereof.

Take of the Rust and soil of Brass twelve drams; *Ammoniacum* two drams; Let the *Ammoniacum* be dissolved in Vinegar, and the aforesaid Soil of Brass therewith mingled. Or,

Take strong Ley four ounces; the Decoction of Lupines one ounce; Honey of Roses strained one ounce and half; *Alum* half an ounce; and mingle them. If we mind to add any further virtue and strength thereto, to make it the more operative, we may then add half a dram of Precipitate Mercury. Or,

Take the best Wine Vinegar three parts; of the oldest Oyl two parts; Litharge one part; let the Litharge be braised in a Mortar with Vinegar, and afterward let them boyl all together, until they have gotten both the color and consistence of Pitch;

Pitch; of which we are then to form long sharp Tents, for the present purpose. Or,

Take Litharge half a pound; boyl it in Vinegar and Rose water; and then strain and filtrate it. Afterward,

Take Calcined Tartar as much as will suffice; dissolve it in distilled Vinegar: Mingle the Waters, and make thereof that they term Lac Virginum, or Virgins Milk. Or,

Take of the Egyptiack Unguent half an ounce; Sublimate half a dram; Ley one ounce; Rose-water two ounces; Plantane Water four ounces; and then let them boyl a little.

The green Water above mentioned and described is likewise very useful.

But yet nevertheless, if the narrowness and depth of the Fistula hinder the fit application of these Medicaments (as for the most part it so falleth out) then the said Fistula is either wholly to be opened, or else the Medicaments are to be injected even unto the very bottom thereof. When you have a mind to open the Fistula, then let the searching Instrument be first of all conveyed thereinto, and so let it be opened upon the said Instrument. But if it be not thought fit to open the whol Fistula, then Medicaments are to be injected, and these must be either liquid or dry. The liquid are injected by a Funnel or Squirt; and they are to be washed with Ley, Mulfum, Sea-water, Lime-water, the Water of hot Baths, Aqua viræ, or the Spirit of Wine; of which last this is by the way to be observed, that if it be mingled together with other convenient Medicaments, it is then of singular use and benefit in the cleansing and drying of fardid Ulcers; as we may see in Valeriola his fourth Book, Observat. 10. and in his fifth Book, Observ. 1, 7, 8.

But the dry are made into a Pouder, and blown into the Ulcer by a Quill put into the mouth of the Fistula; especially if the Fistula be but short and within the flesh: but if it be long, it may likewise be opened on the opposite part, that so on both sides the Medicament may be injected. Where this is not to be passed over in silence (touching which we likewise gave you notice before, in the Cure of Sinus) that we use our utmost endeavor, that the orifice of the Fistula may be open downward toward the Inferior parts, that so the Humors may the more freely flow forth; or if it be not open, then in that very place the Fistula is to be opened, unless there be some great and weighty impediment to hinder the same.

But when notwithstanding all the Medicaments the Fistula yieldeth not, neither giveth place at all unto the most prevalent Remedies that have or can be administered; and that sometimes in this case the operation of the hands bringeth more assistance, help, and benefit, we are sometimes likewise to betake our selves unto

the Iron Incision Knife, and the fire it self. To wit, the whol Sinus is to be opened; which yet nevertheless it will not be safe for us to attempt in those Fistula's that reach unto the great Arteries, or the Nerves, or the Tendons, or the Membrane that girdeth in the Ribs, or any other parts that are of the like Nature with these. But whensoever this opening shall be judged fit and feasible, the Sinus being then first of all searched by the Probe, or by some Liquor cast into it, the whol (such as it is) may be opened. The Fistula being opened, the callous hardness ought either with Medicaments, or the edge of a Pen-knife, or a Razor, to be drawn forth, even so far until we come unto the good and sound flesh; which may be perceived, not only by the color, but even likewise from the blood, and the sense of pain. The same kind of Callus (if it be extraordinary hard) may most chiefly be taken away with a red-hot Iron; this being done as with most speed, so with the least sense and feeling of pain. But nevertheless the fire doth so terrifie and affright people, that few or none will admit of this Remedy. But yet in the mean time while these things are in doing (whether it be by Caustick Medicaments, or by the fire-hot Iron, or by the fire it self) the part is all the while to be well guarded round about, with some one or other Defensive Cooler and Repeller, lest that upon the exciting of pain an Inflammation should be raised.

The Fistula being thus thoroughly dried, and burnt, we are then to make use of some mitigating Medicament, and such as may loosen and cast off the crustiness thereof. But if the Fistula reach unto, and end in a bone, this so soon as it is discovered by the Section, we must with all care and diligence pare and scrape away whatsoever we find to be corrupted and black in the said bone: and this indeed must be but only in the very superficies of the bone: for if the rottenness hath further corrupted the said bone, then the scaly corrupted part thereof is to be cut forth with a Wimple, unless it fall forth of its own accord; but if the rottenness shall have penetrated even unto the marrow of the bone, then that that is corrupted is to be taken out with the Cizers that are for that purpose. But lastly, if the Bone be wholly corrupted, then all the whol bone is to be taken forth; which may indeed be done in smal bones; but it cannot be so done in others. The bone being now purged, those things are afterward to be administered that are called Incarnatives, viz. Such Medicaments as generate and breed flesh. Unto which if the Fistula give not place, it is then a sure sign that as yet all that was corrupted is not wholly taken away. The Fistula is thereupon to be opened deeper, and the bone to be scraped with all the utmost diligence and care that may be, and then it must be further cleansed. But if the Fistula will not yet after all this be cured, we may without all doubt conclude, that it hath penetrated

red so deep into the body, that it is altogether impossible to find out the end & bottom thereof. And therefore the whol business is then to be committed and left unto Nature: which yet nevertheless we may likewise assist and help with Medicaments; for which end and purpose *Nicolaus* the Florentine prescribeth this following, which (as he saith) wil both draw forth the bones that are broken and corrupted, eat through the naughty putrefied flesh, and heal the Fistula.

Take Salt torrefied by the fire, Tartar, and Agarick; let them be made into a very fine Powder; and then this Powder being tempered together with Honey, let it be imposed upon the Fistula.

The Callus being now removed and quite taken away, if there be any thing fordid and foul yet left remaining, we must then make use of Deterfive and Sarcotick Medicaments. For which end, Pimpernel, Golden Rod, Centaury the less, the Root of Aristolochy, and the like, are to be administred.

Take Turpentine washed in the Spirit of Wine three ounces; the Juyc of Smallage three drams; Pimpernel half an ounce; Honey of Roses strained, one ounce and half; let them boyl until wel-nigh the one half of the Juycs be wasted away. Afterwards, add of round Aristolochy one dram; the meal or flour of Lupines three drams; Myrrh one dram: mingle, &c.

Which said Medicament, either the Tents may be dipped in it; or else it may in some other manner be administred unto the Fistula.

There is extant in *St. Augustines* 22. Book of the City of God, and Chap. 8. a most miraculous Cure (and such as is wel worth the reading) of a Fistula by devout Prayers.

### Chap. 11. Of an Ulcer, with Vermine, or Worms breeding therein.

And sometimes likewise Worms are generated in Ulcers. But now what the cause is of the breeding of these Worms, we have already told you in the second Book of our Institutions, Chap. 9. and in the third Book of our Practice, Part 2. Sect. 1. Chap. 5. What was there spoken hath here place likewise: for Worms are generated in Ulcers that are sordid and foul, and which were not cleansed as they ought to have been, neither purged from their Pus and Sanies; and this especially if it be in the Summer time, and the Air being hot and moist.

#### Signs Diagnostick.

If the Ulcer be open, then the Worms appear unto the sight; but if by reason of the streightness and narrowness of the Ulcer the Worms cannot be seen, they may yet be known by other signs; by a certain biting, both of pricking and pain, and by

the sense of motion. And there is most commonly likewise a certain stink perceived in those Ulcers.

#### The Cure.

The whol business and substance of the Cure consisteth in this, to wit, that the Worms be taken away, and the putridness of the Ulcer be hindered and prevented. If therefore the Worms lie open, and may be discerned, they are then to be drawn forth with Instruments fitted for the same purpose: but if they lie hid, or stick too close and fast unto the part that they cannot be drawn forth, they are then to be killed with Medicaments that may likewise withal take away the putridness, and the overgreat humidity of the part; and this is done by Medicaments made of Wormwood, Horeboud, Dittany, Fern, Scordium or Water Germander, Featherfew, Centaury the less, the Leaves of Peaches, Lupines, Gentian, the Gall of a Bull, Aloes, and Myrrh As,

Take Wormwood, Centaury the less, Horeboud, of each half a handful; boyl them in ordinary Spring Water, and strain them: Take the straining half a pint; Honey two ounces; Aloes two drams; Mingle them, &c. Or,

Take Gentian Root half an ounce; white Hellebore two drams; Dittany of Candy, Wormwood, Centaury the less, of each half a handful; boyl them in a sufficient quantity of Water; then take of the straining six ounces; the Elixir of Propriety two drams; Mingle, &c. Or,

Take Unslaked Lime a sufficient quantity; extinguish it with Wine Vinegar; and afterwards let it be stirred wel about with Oyl of Roses, that so a Cataplasim may be made bereof. Or,

Take Aloes two drams; Myrrh powdered one dram; the meal of Lupines two drams; Bulls Gall half an ounce; Flour of Brass one dram; Honey as much as wil suffice, and make a Liniment. Or,

Take Meal or flour of Lupines three drams; Elixir propriety two drams; Bulls Gall three drams; Honey a sufficient quantity, and make bereof a Liniment.

### Chap. 12. Of a Varicose Ulcer.

Touching Varices we have indeed spoken above, in the first part, Chap. 44. yet notwithstanding it sometimes so happeneth, that an Ulcer may be joyned with, and accompany these Varices; and this Ulcer they call a varicose Ulcer. Which Malady is easily known from the signs of a Varix, and from Ulcers.

Now this varicose Ulcer cannot be healed, unless the Varices be first of all healed, as *Galen* teacheth.



teacheth us, in his fourth Book of the Method of Physick, Chap. 2. And therefore whensoever at any time we are minded to take in hand the Cure of such an Ulcer; in the first place the Cure must be directed unto, and look toward the said Varices; which how it may be accomplished, we have told you in the place before alleadged. Now there is extant (in *Gulielmus Fabricius* his fourth Century, and *Observat.* 85.) a History of this varicose Ulcer, how it was cured: the History he relateth in these very words. In the year 1589. (saith he) when I returned home unto

*The History of a monstrous Ulcer*

my Fathers House out of France, I was called unto a certain Patient here in the Neighborhood, a man about forty years old, very strong and able of Body, and of the best Constitution, *Adolphus* auff dem Bruch by name. This man was sorely troubled with a malignant and inveterate Ulcer in his left Leg, together with a Varix of an extraordinary great bigness: for it was as thick as my Arm neer unto the Hand-wrist, and almost a span long. But it began in his Ham, and thence descending downward toward the Feet it fetched a ring, and made two circumvolutions. But it was notable to observe, that so soon as ever he lifted up his Leg on high, the blood immediately retired; but the Leg being set again upon the ground the blood again descendeth, and that in a very moment; and (that I may tel you in a word) the blood ebbed and flowed, no otherwise then as if in some hollow Pipe or Conduit it had been cast, first into this, and then into that part thereof.

Moreover, it being so that varicose Ulcers can by no means be consolidated unless the Varix be first cut forth, I therefore thus set upon the Cure. Having appointed my Patient a good and wholesome Course of Dyet, and now and then also thoroughly purging his Body, and opening the Arter-Vein of the same side, and putting the sick Person upon a Bench, I then easily and gently separated the Skin in the Ham from the Vein it self. And then with a Thread twice doubled (which I conveyed in by a Needle that I crooked on purpose) I laid hold on the Varix; and in the lower part of the Varix I proceeded in the very same manner. But before ever I would draw the Thread close, and tie the knot, I commanded that his Leg should be again set upon the ground from off the Bench; and this I did to this end, that the blood might in manner as aforesaid flow downward: for I much feared lest that the Blood by reason of its ebbing and flowing being made very thin and subtil, should here cause some inconvenience, or other, &c. See what further followeth in this History, in the first part of this fifth Book, Chap. 44. in the Conclusion of the said Chapter, in which we treat of Varices.

### Chap. 13. Of an Ulcer with the rottenness of a Bone.

IT happeneth likewise sometimes that a rotten and corrupted bone lieth under the Ulcer. Now Bones are corrupted, and contract a rottenness, either from internal Causes, to wit, the long afflux of the excrementitious humors unto the bones, or else the venomous quality and acrimony of the Sanies, or else by some hidden propriety; like as it often happeneth in the French Disease, that the very bones become rotten, the Skin in the mean time remaining whol and sound. The external causes are, the Ambient Air, especially that that is cold, a contusion of bruise, an Incision, and tart or sharp Medicaments.

#### Signs Diagnostick.

If the Bone be in the open view, the corruption thereof doth then easily appear, because (as *Celsus* writeth in his eighth Book, and Chap. 2.) that that is vitiated at the first appeareth almost as if it were far, and after ward, either black, or rotten. But although the Bone lie hid, and do not in the least appear, yet nevertheless its Corruption discovereth it self by certain Signs. And if a Fistula went before, or that there were an Ulcer of a long continuance, then the Bone is corrupted by the touch of the Pus and the Sanies; touching which *Hippocrates* thus writeth, in the sixth of his Aphorisms, Aphorism 45. If the Ulcers (saith he) be Annual, and such as return year after year, or if likewise they be of a long continuance, then there will necessarily follow an Impostumating and putrefying of the Bone, and the making of hollow Cicatrices. Moreover, he saith that such like Ulcers are indeed sometimes brought unto a Cicatrice, but that they are soon after again renewed, the Cicatrice being broken. For the humor and the Sanies that sweateth out of the corrupted Bone eateth through the Cicatrice, and reneweth the Ulcer. And therefore if there be any Ulcer often renewed, it evermore giveth us great cause to suspect that there is one or more Bones corrupted, as *Galien* tells us in his Comment. upon the sixth Book of the Aphorism. Aphor. 45. and *Paulus Aegineta* in his fourth Book, and Chap. 10. And this is oftentimes to be seen in the rottenness of the Teeth, out of which there stillet forth a Sanies through the holes of the Cheek or Jaw-bone, and there in the external part of the Jaw it exciteth and causeth an Ulcer: which although it may be, and oftentimes is healed, yet notwithstanding after a very short time the Cicatrix is again broken. If such an Ulcer therefore appear in the Cheek, and be there often renewed, the Teeth are then to be lookt into, and if there be any one of them rotten, it is forthwith to be brawn. For the Ulcer cannot possibly be perfect.

fectly and wholly healed, before the Tooth that supplieth the material cause unto the Ulcer, be drawn forth. Thirdly, the flesh that lieth above upon the Ulcer is soft and flaggy; for it is made thus soft by the *Sanies* that sweateth as it were out from the Bone: and sometimes likewise it becometh wan and Lead-coloured by reason of the vicious humor that floweth forth from the Bone; in the seventh Book of the Aphorisms, Aphor. 2. Fourthly, the *Sanies* that floweth forth of the Ulcer is more abundant then what is usual, considering the bigness of the Ulcer; it is likewise thin, stinking, and of very ill consequence, as *Galen* tells us in his third Book of Fractures, Tit. 18. And if there be a dry Liniment put into the Ulcer, so that it may reach even unto the very bone; and the next day drawn forth again, it will stink loathsomely. And lastly, if the Probe or searching Instrument be conveyed into the Ulcer, even unto the very bone, then the said Ulcer is not found to be smooth and slippery, and hard, but unequal, rough, and soft.

But whether this rottenness be deep, or only superficial, *Celsus* in his eighth Book, and Chap. 2. teacheth us how we may discover it in this manner. If (saith he) a slender and smal Probe be thrust into the hole of the Ulcer, it will by its more or less entering therein give us sufficient notice, whether the rottenness be in the top and superficies only, or whether it hath descended deeper. The blackness likewise of this *Sanies* and rottenness may rightly be gathered from the pain, and from the Fever; which if they be mild and moderate, it is then an Argument that the said rottenness hath not descended very deep: but when the aforesaid Symptoms are great, then the rottenness hath gotten down very low and deep; but it will appear yet more manifestly, by turning about the Wimple in it. For there is then an end of what was amiss, when there ceaseth to come forth any more of the black scurfiness. Thus *Celsus*.

### Prognosticks.

1. All rottenness in the bones hindereth the Cure of the Ulcer; neither can any Ulcer be perfectly healed, under which there lieth a bone that is corrupted.

2. If by reason of the diseased and rotten bone the flesh be become blackish, and of a Lead-colour, it then berokeneth much evil; 7. Sect. Aphor. 2. For as *Galen* Comments upon the aforesaid Aphorism, it signifieth no mean and smal distemper of the bones, but an extraordinary corruption of them.

3. If the rottenness of the bones be neer unto the Nervous parts, as in the Hands, or Feet, or else in the Joynts, and heads of the greater bones; or otherwise about the heads of the Muscles, and the Nerves, and the Tendons; it is not in any of these cases easily cured; in regard that we cannot

with any safety make use of, or appoint any Chirurgical operations.

4. The Cure (in like manner) is altogether as difficult, if the rottenness be about the great Arteries, and the Veins.

### The Cure.

Besides the Indications that the Ulcer affordeth us, the rottenness of the bone sheweth us likewise that what is corrupted must be wholly taken away: for neither can that that is dead be by any means corrected, and amended. For that which is in the flesh and soft parts, we call it *Sphacellus*; but if it be in the bone, it is then rottenness.

But now, that the corrupted bone may be taken away, it is first of all to be cleansed, and then made bare (if it be covered with flesh) the Ulcer being cut off. But nevertheless (as we told you erewhile) there cannot oftentimes any Section or Cutting be administred, by reason of the Nerves, Muscles, Tendons, Arteries, and the greater Veins. The bone is therefore then (as much as may be) to be cleansed with a Gencian, or Rape root, tenderly conveyed into the Ulcer. The flesh likewise that lieth at the top of the bone may be consumed by a Caustick Medicament, or by any potential Caustery, and so the bone may be bared in the same manner as Issues are wont to be excited.

The corrupted bone when it is made bare, it is then to be taken away either by Chirurgery, or by Medicaments. We must of necessity make use of Chirurgery, when the Corruption of the bone is more deep, and not in the Superficies; or when we desire a quick and speedy Cure, as in the bones of the Thorax. For Nature doth but very slowly separate the corrupted bones, and scarcely (now and then) in the space of thirty five, or forty daies. And therefore this separation of the corrupted bone from the sound may otherwise be assaied by Medicaments.

Now those Medicaments that separate the corrupt bone from the sound ought to be very drying, that so they may consume the superfluous humidities in the corrupted bone, and that they may likewise dry even the very bone that is found, that so the Expulsive faculty may separate from it that that is vicious in it; and that the ossifuge or bone-breeding faculty may generate a bone, or at least a *Callus*, that may thrust forth the bone that is corrupted.

The milder sort of Remedies (for this purpose) are the Root of Sow-fennel, white Briony or white wild Vine, Flowerdeluce, Myrrh, Aloes, Alum. The stronger sort, are, the Root of round Aristolochy, of Water-dragon, the Rind of Allheal, of the Pine Tree, the Pumice stone burnt, the dross and refuse of Brasis, the Mineral Chrysocol, and the Spirit of Wine. The strongest

Medicaments, in case the Bone be corrupted

strongest of al; Euphorbium, than which *Fallopian* writeth that he himself never found any more excellent, and that would sooner take away the corrupted bone; burnt Copperas, the ashes of the Fig-tree, Lime, Aqua fortis, the Oyl of Vitriol, and the Oyl of Sulphur.

Of those Medicaments there are Compounds to be made, which are to be applied either in the form of a Pouder; or else mingled with Honey, Rosin, Wax, Unguent *Egyptiack*, or some other such like Unguent, and so applied in the form of an Unguent.

This following Pouder is very efficacious: Viz.

Take Root of round *Aristolochy*, Flowerdeluce, Myrrh, Aloes, the Rind of *Alheal*, the refuse of Brass, the rinds of the Pine-tree, equal parts of al: let them be al mingled together, and made up with Honey into the form of an Unguent.

This Pouder following is likewise very much approved of.

Take Mummy, and Sarcocol, of each half a dram, Euphorbium one dram, and make a Pouder. Or,

Take the Root of round *Aristolochy*, of Sow-fennel, of each half an ounce; the rinds of the Pine-tree two drams; white Agarick, Earthworms prepared, of each one dram and half; Euphorbium one dram; make a Pouder, or an Unguent with Honey of Roses; as likewise this Oyl:

Take Citrine Sulphur one pound; put it neer unto a gentle fire that it may melt; unto which add, of burnt Tartar made into Pouder half a pound; mingle them with continual stirring until they are cold. Afterward let them be pulverized, and set in a moist place upon a stone until they melt; and with this Oyl let the corroded bones be anointed. Or,

Take the Root of long *Aristolochy*, Briony, Sow-fennel, Flowerdeluce of Florence, of each one dram, Euphorbium one scruple; make a Pouder, and strew it upon the bone. Or,

Take Pouder of the Root of Sow-fennel, of round *Aristolochy*, of *Oponax*, and Euphorbium, of each half a dram; Turpentine an ounce and half, Wax half an ounce; boyl them to the consistence of a Cerote. Or,

Take the Roots of both *Aristolochies*, of Briony, of Sow-fennel, of Florentine Flowerdeluce, of each half an ounce; Centaury the less, the Rind of the Pine-tree, of each three drams; Aloes two drams, flour of Brassa dram and half: unto al the foresaid pour of the Spirit of Wine as much as wil suffice, and extract the Tincture.

But if the corruption of the Bone be so great that it cannot be wholly taken away by Medicaments, then there wil be need of Chirurgery; and the corrupted bone is to be taken away, either by shaving and paring off, or else by burning. Now for the abrasion or paring it away, there are here two Instruments that are made use of; the

scraping Iron Instrument, and the Wimple or Auger. The former of these taketh place, when the bone is not so deeply corrupted; but the Wimple is to be used when the rottenness hath penetrated very deep into the bone. Of shaving or paring, *Celsus* in his eighth Book, and Chap. 2. thus writeth: He that shaveth these rotten Bones (saith he) must with al boldness and courage make an impression with his Iron Instrument, that so he may do somewhat, and may the sooner make an end. The end is then, when we come either unto a bone that is white, or unto a bone that is solid: for it is manifest by the whiteness of the bone that the fault in regard of the blackness is cured; and by that same solidity it is likewise manifest that what was amiss in the bone in regard of the rottenness, is in like manner ended. We also told you before that unto the sound and whol bone there wil be some smal access of Rosie fresh-colored blood. But if at any time it descend deeper, we may wel question both of them, as very doubtful: as for the rottenness, our knowledge is indeed therein somewhat quicker. A smal and slender Probe is put down into the hole, which by its entering more or less, sheweth unto us whether the rottenness lie in the top, or whether it be descended deeper. The blackness may likewise indeed be guessed at (if not certainly known) from the pain, and from the Fever; which if they be mild and moderate, then we may conclude that the said blackness is not descended very deep; but yet nevertheless it is made more manifest when we come to make use of the wimple; for there is then an end of what was amiss, when there ceaseth to come forth any black dust. And therefore if the rottenness hath descended deep, we ought then to make many holes (with the wimple) as deep as that that is amiss in the bone: and then into those holes burning hot Irons are to be let down, until at length by this means the bone be wholly dried. For withal (after this) both whatsoever is vitiated and corrupted wil be loosened from the lower bone, and that hollow nook wil be filled up with flesh: and the humor that afterward issueth forth wil be either none at al, or certainly very little. But if there be any blackness, or if the rottenness be likewise passed over unto some other part of the bone, it then ought to be cut out; and this same may likewise be done in the rottenness penetrating into some other part of the bone: but that which is altogether vitiated must be wholly taken forth: if the inferior part be whol and sound, then only so far as there is any corrupted, it ought to be cut forth. And also whether the Breast-bone, or whether it be a Rib that is rotten, it is rendered by this fault unsound, and therefore there is a necessity of cutting it forth. Thus *Celsus*.

By al which it appeareth, That the Ancients after the paring and shaving of the bone were wont likewise to burn it, this burning being the



chiefest remedy for the consuming of al the excrementitious humidity. But then notwithstanding in the applying of a Cautery we must alwaies beware, lest that the flesh that lieth neer be likewise burnt together with the corrupted bone: and therefore the Cauteries are to be applied through Iron pipes, by which the flesh is to be defended and safeguarded; of which Iron pipes we ought to have many in readines, that so after one is grown hot, another that is cold may be applied; or if we think good to make use of one only, then as oft as it is hot we may put it into cold water to cool it. And whatsoever of the humor sweat forth out of that bone, it is to be cleansed and wiped away with a Sponge or a Linen cloth, lest that otherwise it corrupt the neerly scituated parts. After the burning, we are then in the first place to apply Rose-water with the white of an Egg, for the preventing of the Inflammation, and the moderating of the pain; afterward we are to administer the Oyl of Roses with the Yelk of an Egg; and then after this, Butter with Honey of Roses. But unto the bone that is burnt, the Pouder of the Root of Sow-fennel, of Aristolochy, Euphorbium (or some other of the forementioned Remedies) is to be imposed and laid upon the corrupted bone, until the said bone be separated, and parted.

After the taking forth of the corrupted bone, some drying Pouder (and such as are called Cephalick Pouders) is to be strewed upon the place. After this the Ulcer is to be filled up with flesh; and at length to be closed and shut up with a Cicatrice.

#### Chap. 14. Of Ulcers hard to be cured, commonly called Cacoethe, Telephium, and Chironium.

**T**HERE are Ulcers likewise that are here and there in the Writings of Physicians termed *Dyssepulote* Ulcers, *Cacoethe*, *Telephia*, *Chironia*, and *Phagedana*; which what they are, we shal in this and the following Chapter explain unto you. And in general, al those Ulcers may be called *Dyssepulote* (or hardly healed) that are not to be cured without much difficulty, and such as are not closed up with a Cicatrice without much ado. Touching the right curing of which *Galen* wrote both the fourth Book of his Method of Healing, and his fourth Book of the Composition of Medicaments according to their kinds. And this indeed happeneth for four causes, as *Galen* tells us in his fourth Book of the Method of Healing, Chap. 1. For of those Ulcers that are hardly cured and rebellious, some of them are made such by reason of the distemper in the ulcerated part, and others of them become such by means of the humor flowing in unto them. But now this very

distemper may again be said to be twofold, since that the subjected flesh is sometimes such as hath exceeded the bounds of Nature, in the quality only; but sometimes likewise with a certain necessary Tumor or swelling. And in like manner, the afflux of humors admitteth of a twofold division; to wit, into, First the bad and depraved quality, and secondly, the excessive quantity of the humor or juyce that floweth in. But in the mean while, either some, or else al the aforesaid Affects are alike and indifferently mingled together. Yet nevertheless, the same *Galen* in the sixth of the Aphorisms, Aphor. 45. addeth a fitch cause; where he writeth, That Ulcers remain a long time, not only because of the afflux of humors, or by reason of any disposition in the Member contracted from the humors flowing in; but also (thirdly) by reason of some passion of the bone that is corrupted in that place. For although Ulcers that have a corrupted bone lying underneath them may sometimes be cured and covered over with a Cicatrice: yet notwithstanding that soundness is not firm, and of any continuance, but the Ulcer is afterward again renewed; and this happeneth so long as the rotten bone remaineth unhealed.

And yet nevertheless, *Galen* in his first Book of the Composition of Medicaments according to their kinds, Chap. 18. distinguisheth between these *Dyssepulote* Ulcers, that is to say, such as are hardly brought to a Cicatrice, and the Ulcers *Cacoethe* or Malignant: and he calleth such of them

Malignant  
ulcers.

*Dyssepulote*, that arise from the conflux of either many or sharp humors; without this, that the part affected hath already such a disposition, that although that that floweth in should be good, yet notwithstanding it corrupteth it: now those Ulcers that have already gotten this aforesaid disposition, he calleth *Cacoethe*, or malignant. So that al those Ulcers that are hardly cured (from what cause soever it be) may in general be called *Dyssepulote* Ulcers; and now in special likewise those that are so made, without any depraved disposition of the part affected. But in regard that al the differences and causes of Ulcers hardly cured have hitherto been explained, there is no need that we add any thing more concerning them.

And yet nevertheless, there is one cause of those Ulcers that are hardly curable that I have sometimes observed, which I think it not fit here altogether to pass over in silence. It happeneth very often, that in long continued Ulcers the skin is extenuated, and the fleshy panicle and fat is wasted; which if it happen, we may conclude that the Ulcer is not healed, since that the skin can by no means be agglutinated unto the flesh lying underneath it: for when the Capillary Veins tending to the skin are eaten asunder, they cannot then convey unto the skin that blood that is necessary for consolidation.

This

*Ulcers Chironia.* This is known, because that the skin is not only by the touch perceived to be extenuated; but the color is likewise changed, and becometh wan and dark, and the skin (as it were) withereth away.

There is in this case little or nothing to be performed by Medicaments; but the skin is either to be corroded by some Caustick Medicament; or else (as I have sometimes caused it to be done) the Ulcer is to be opened longwaies with the Iron; and this may very easily be done.

As touching the Ulcers *Chironia* and *Telephia*, the Chironian Ulcer hath its name from the Centaure *Chiron*: though some there are notwithstanding that render another reason of the said appellation. *Zenodotus* (as *Erasmus* of *Rotterdam* relateth in *Chil.* 2. *Cent.* 8. *Prov.* 21.) thought that *Chiron* received from *Hercules* a Wound in his Foot, and that the said Wound being altogether incurable, he perished thereof; so that incurable Ulcers are hence called *Chironian* Ulcers: But *Pliny* in his twenty fifth Book, Chap. 6. and *Ovid* in the fifth Book of his *Fabst*, are of opinion that *Chiron* was not wounded by *Hercules* (who was his friend) but that *Chiron* being entertained by *Hercules*, *Chiron* his Arrow fell accidentally upon the Foot of *Hercules*, and caused therein a most dangerous and envenomed Wound; and that *Chiron* himself healed this Wound with Centaury, which Plant was therefore by those that came after called *Chironium*; and that this *Chiron* was the first Inventor of the ancient Chirurgery, being a part of Physick, and that from Hands, and the operation of those hands it received its name. So that any consumacious and malignant Ulcer, that by reason of its contumacy hath need of some *Chiron* to cure it, and which was at the first cured by the said *Chiron*, may be called a *Chironian* Ulcer.

*Celsus* in his sixth Book, and Chap. 28. defineth a *Chironium* Ulcer in this manner: It is (saith he) great, and hath lips that are hard, callous, and swelling. The Sanies that issueth out of it is not much, but thin; there is no unsavory and stinking smel, neither in the Ulcer, nor in its Tumor. There is no Inflammation, the pain is but little and moderate; nothing creepeth therein; and therefore it bringeth along with it no great danger; yet however it is not easily cured. There is sometimes a thin Cicatrice brought all over it, but this is again soon broken, and the Ulcer renewed. It happeneth most especially in the Feet, and in the Thighs.

The same *Celsus*, seeing that he maketh no mention of *Telephian* Ulcers, it is not to be doubted but that he thought them to be the same with the *Chironia*: as likewise *Paulus Aegineta* doth when in his fourth Book, and 26. Chap. he thus writeth: *Inveterate Ulcers* (saith he) and such as hardly admit of a Cicatrice, some call them

*Chironia*, as though they needed a *Chiron* himself to heal them; others there are that call them *Telephia*, because that *Telephus* continued long troubled with such a like Ulcer. Those that think that both the *Chironium* and the *Telephium* Ulcers consist not so much in their corrosion as in this, that they are both of them malignant and contumacious, so that they are wont to continue with the sick persons even unto their old age, these dissent from *Galen*, who (in the second Book of the Method of Healing, Chap. 2. and 14. of the said Method. Chap. 17.) thinketh that *Phagedæna* consisteth in erosion; and that *Chironium* and *Telephium* are a species hereof. Where we must know (as *Galen* acquaints us in his Commentary upon the sixth of the Aphorisms, Aphor. 45.) that all Ulcers that become greater and worse, the Ancients called all these Ulcers *Phagedæna*; and if in this manner we take *Phagedæna*, then *Chironia* and *Telephia* may be called a Species or kind of *Phagedæna*. But there are some certain of the latter Writers that have endeavored to distinguish them, giving unto each of them a proper and peculiar appellation; and some of these they call *Chironia*, others of them they term *Telephia*, and a third sort *Phagedæna*. So that *Phagedæna* being taken for a corroding Ulcer, is one while the Genus of *Chironium* and *Telephium* Ulcers; and another while a certain determinate Species of a corroding Ulcer, differing from *Chironium* and *Telephium*; which (to wit) besides the skin, eateth through the flesh it self; and yet nevertheless is not altogether so malignant as *Chironium*, or *Telephium*, or the *Cancer*.

To wit, *Telephian* Ulcers are the same with *Chironia*, so called from *Telephus*, who was a long time afflicted with such an ulcer. And what *Galen* (in the fourth Book of the Composition of Medicaments according to their kinds, Chap. 4.) hath written touching *Chironia*, to wit, They call (saith he) those *Chironian* Ulcers that are not meanly and indifferently malignant or contumacious, but such as are so in the highest degree; The same is likewise to be taken and understood of the ulcers *Telephia*.

### The Causes.

Now such like Ulcers have their original from a Melancholy humor, having some (though not much) black Choler mingled together with it.

### Signs Diagnostick.

Such like Ulcers are known, in that they have their lips ill colored, and for the most part they are red, and itching; and although the Ulcer be never so lightly and gently handled or wiped, yet there is a pain perceived; the parts lying round about it swell up, and the Ulcer is from day to day dilated; and not only the skin, but the flesh likewise that lieth under it is eaten through.

Prognos.

*Prognosticks.*

Every sort of these Ulcers is Contumacious, and hard to be cured, as we told you before.

*The Cure.*

As touching the Cure, Universals being premised, and the body emptied of the virious humor, and a sic course of Diet prescribed, there are to be applied unto the Ulcer Medicaments that are compounded of such things as are cold and dry, astringent, and withall Discussive: and such are Plantane, Nightshade, the tops of the Black-berry or Dog-berry bush, the Flowers of Roses, Cypress Nuts, Pomegranate flowers and rinds, Mastick, the bark of Frankincense, burnt Lead, Litharge, and the like.

And therefore in the first place, let the Ulcer be washed and fomented with this or the like Decoction.

Take Plantane one handful, Flowers of red Roses, Pomegranate flowers, and Cypress Nuts, of each half an ounce; Myrtle berries, Pomegranate rinds, Sumach, of each three drams; Alum burnt half an ounce; boyl them in Water and wash the Ulcer wel therewith. Or,

Take the Juyc of the Bramble, Plantane, Nightshade, Shepberds-staff, of each four ounces; the whites of six Eggs, Alum four ounces; destil them in a Leaden Alembick: Let the Ulcer be washed and fomented wih this Water: and let the parts likewise that lie neer unto it be annoynted over with some Defensive.

After the Ulcer is thus washed, let the Unguent Diapompholyx be laid thereon; as also the white Camphorate Unguent, and the Unguent de Minio. Or,

Take Tutty prepared half an ounce, burnt Lead, Cerust washed, of each an ounce; let them be wel mingled together in a Leaden Mortar, pouring in unto them by little and little the Juyc or water of Plantane, and make hereof a Mass: afterwards add of Bolearmenick three drams; Oyl of Roses and Wax of each as much as will suffice, and make an Unguent.

More of these like Medicaments shal be declared in the Chapter following.

### Chap. 15. Of the Ulcer Phagedæna.

*Phagedæna what it is.* **A**ND because (as we have told you) there is likewise mention made of *Phagedæna* among the Ulcers; we shal therefore here in this Chapter explain it, and shew you what it is. It is so called from the Greek word *Phagein*, from its Eating; and this (whether Tumor or Ulcer) hath received its name from eating through and corroding, because it eateth through the parts lying neer unto it. And indeed it is properly an Ulcer. But yet nevertheless, in

regard that the Lips of the Ulcer strutting forth with black Choler are lifted up into a Tumor, it is therefore by some referred unto Tumors; and there is mention hereof made by *Galen* in his Book of Tumors, Chap. 14. But we wil treat here of it among Ulcers. But yet nevertheless, as touching its name, this is to be noted, that it is not alwaies taken in one and the same signification. For sometimes (as *Galen* tells us, in *Epidem.* 6. Comment. 3. Text 37.) *Phagedæna* signifieth an appetite unto, and eating of much meat, and hence (by the Author of the Medicinal Definitions) it is defined to be, a Constitution in which Persons having an appetite unto much Food, and devouring much thereof are not able to retien and keep it; but when they have cast it up, they again desire more; and in this manner it is also defined by *Aurelianus*, in the third Book of his *Chronic.* Chap. 3. So that *Phagedæna* being taken in this manner, and in thislence, is nothing else but that we cal the Dog-like appetite. And therefore *Pliny*, in his Book 20. Chap. 5. 13. and in his Book 30. Chap. 9. and Book 35. Chap. 13.) for distinction sake (when he speaketh of an Ulcer) is wont to add the name of Ulcers, and to cal them *Phagedæna* of the Ulcers. And furthermore the name of a *Phagedæna* doth sometimes signifie a certain kind of destruction that befallerh unto Bees; of which *Columella* writeth in his tenth Book, and Chap. 13. But here in this place we take *Phagedæna* as it is only an Ulcer; touching which *Galen* in his Book of Tumors, and Chap. 14. thus writeth; *Whatsoever of the Ulcers there be that eat and devour, and reach unto the Bodies lying round about them, and continually eating through that that is sound, all these Ulcers are by the Greeks called Phagedænica: but those that are compounded of both (to wit, of an Ulcer, and a Tumor, surrounding the flesh) these are called Phagedæna.* Thus *Galen*. Moreover alio *Herpes* feedeth upon, and eateth up the parts lying neer round about; but the exulceration is in the Skin alone: but the *Phagedæna* (together with the Skin) reacheth even unto those parts that lie underneath.

*Nome* is likewise a different Affect, so called from the Greek word, *Nome*, signifying to feed; because that it is wont to move forward (stil feeding the Disease) from the sick and unsound parts unto those that are whole and sound, and of these sound particles it is wont alwaies to add something thereof unto the unsound; so that it hath its Appellation nor from the substance of the thing declared and shewn; but from something that is Accessary, which is to feed; as *Galen* tells us in his fifth Book of the Method of Healing, Chap. 4. For *Nome* signifieth an eating or devouring putridness, albeit that the Ulcer creep but slowly. But *Phagedæna* is from humors that are sharp and corroding, even without any putridness.

But



what Phagedæna is.

But what a *Phagedæna* is, we are now to declare unto you. Now a *Phagedæna* in special, and properly so called, is an Ulcer that feedeth upon and eateth through the flesh lying underneath it, and those things that are about it; and then preying upon somewhat belonging unto the sound parts, which it addeth unto those that are diseased and unsound; as we may see from the sixth Book of the Aphor. Aphor. 46, and in *Galen* his Book of Tumors, Chap. 12. To wit, the *Phagedæna* which the more ignorant Physicians call the Ambulative or walking Ulcer, is an Ulcer that is tumid and profound, eating through the parts lying neer, and the flesh that lieth underneath.

its difference from Nome.

For it hath a Tumor about its lips, by which it is distinguished from *Nome*, which likewise eateth thorough the adjacent parts, but then it is without any Tumor. Although that it be likewise otherwise distinguished from *Nome*, because that in *Phagedæna* the Corrosion is only from a Malignant quality, and the acrimony of the humor; whereas in *Nome* there is likewise a putridness conjoyned. And it is also a deep and profound Ulcer, and such as doth not only eat through the Skin, but even through the flesh also; in which respect it differeth from the *Herpes*, that corrodeeth and eateth through the Skin only.

### The Causes.

This Malady hath its original from an adust or burnt humor, and Choleric, and such as almost degenerateth into the Nature of black Choler or Melancholly; or else from yellow Choler with salt Flegm, and a ferous or wheyish humor therewith mingled: which humor is not so thin as that that causeth the *Herpes*; nor yet so thick as that which produceth the *Cancer*. But now these humors proceed, either from some principal Member affected with a hot and dry Distemper; or else they are burnt in the very part that is affected, that lieth under some hot and dry preternatural Distemper.

### Signs Diagnostick.

The Signs are already declared and explained; and they may be collected out of this, and the foregoing Chapter.

### Prognosticks.

1. These Ulcers are hard to cure; whereupon they are likewise in the general called *Cacoebe*.

2. Yet notwithstanding some are more malignant than others: for which cause there is a necessity that we have in a readiness divers Medicaments, differing in strength and virtue. For we never yet heard of any one that with one only Medicament easily cured all such like Ulcers as these.

3. Eating Ulcers, with a hot and dry distemper of the Liver, or else conjoyned with the foul Disease (which we commonly call the French Pox, or the Neapolitane Disease) are not to be cured without much difficulty.

4. Eating and devouring Ulcers unless they be rightly and speedily healed, they often degenerate into an exulcerated *Cancer*.

### The Cure.

About the Cure of this Ulcer it is to be noted (as elsewhere likewise we have often said) that in it nothing will any whit profit or avail (as it is also in other Diseases) whilst that the Cause still remaineth. And therefore in the first place, such a Course of Diet is to be prescribed that will not only not generate such like adust humors, but likewise qualifie and correct their acrimony: and afterwards these bad humors are to be evacuated out of the body.

And moreover this also is to be observed, which *Galen* likewise taketh notice of (in the place before alleadged, *Viz.* in the fourth Chapter of his Book of the Composit. of Medicam. according to the kinds of them; upon the Medicament of *Asclepiades*) where he hath these words; *Rightly* (saith he) *bath Asclepiades added these words unto the end of his prescribed Medicament; Viz. and loosen this every third day, and mitigate the pain with fomentations; and soften the same Emplaster when you have washed it, and again lay it on: for unless the Medicament shal stick somewhat long unto the Skin, it effecteth but little or nothing: which most Physicians are ignorant of, who think that if thrice a day they wipe away the Sanies from the Ulcer, they then do better than those that do it but twice a day.* And the truth is, there is most commonly a great error committed in this very point; whilst most men think that they take the best course with the Patient, if they wash such a like Ulcer three or four times a day. But since that the Medicament doth not at all act any thing unless by the Native heat it be drawn forth into act, and in regard that in malignant and long continued Ulcers the heat of the affected part is very weak, it needeth much time therefore to excite and draw forth the strength and virtue of the Medicament. Wherefore the same Medicament ought to be kept sticking upon the part affected a long while; neither is its action to be disturbed, when the virtue and strength thereof is scarcely yet drawn forth by the heat of the place affected (so that it now but beginneth to act) and a new Medicament to be applied. In which case notwithstanding the condition of the humor exciting the Ulcer is to be considered. For if it be very sharp, it is the sooner to be wiped away, lest that sticking in the ulcerated part it more corrupt the same.

## Chap. 16. Of an Ulcer with pain.

**B**Ut now the Causes do not only cherish and encrease the Ulcers, and there are likewise certain Diseases therewith joyned to accompany them, but there happeneth likewise oftentimes a pain unto these Ulcers, which is therefore immediately to be mitigated; in regard that pain attracteth, augmenteth the Ulcer, and causeth Inflammations and the *Erysipelas* to arise. Now as touching pain in general, we have already spoken in the first Book of our Practice, Part 3. Sect. 1. Chap. 2. So that we are here only to treat of the pain of Ulcers. This pain therefore in ulcers ariseth for the most part from a sharp and corroding humor. But now whereas the pain is to be taken away, either by taking away the cause, or properly by mitigating the pain, or by taking away the sense thereof (as we have shewn you in the fifth Book of our Institutions, Part 2. Sect. 3. Chap. 8. and likewise in the place alleadged) the last of these waies is not so safe, because that it cannot be admistrated without great detriment unto the part; and therefore it is not to be put in practice but only in case of urgent necessity. For this reason it is most safe to take away the cause of the pain; or if this cannot be done but in a long time, and that there be cause to fear that in the mean time the Ulcer may be encreased and made worse, then in this case Anodynes are to be made use of: which what they be, we have shewn in the place alleadged. Those things that here much benefit, are, the Yelks of Eggs, Saffron, Turpentine, Oyl of Roses, Rosin of the Fir-tree, out of which mingled together Liniments may be made, to be imposed upon the ulcer. But upon the Compass or Circuit of the ulcer, the Fat of a Hen, of a Goose, of a Duck, the Mucilage of Linseed, of Fenugreek, of Marsh-mallows, the Oyl of sweet Almonds, of Camomile, of Dil, and of Violets, are to be imposed. Or,

Take *Mallows*, *Marsh-mallows*, of each one handfull; boyl them to a softness, and then bruise them wel; when they are bruised and passed through a hair sieve, add of *Barley meal* one ounce; *Linseed* and *Fenugreek*, of each one ounce; *Oyl of Roses* two ounces; *Oyl of Camomile* and *white Lillies*, of each one ounce; the *Mucilage of Marsh-mallow seeds*, the *extracted Water of the Elder flowers* an ounce and half; *Saffron* one scruple; the *Yelks of two Eggs*: Make a Cataplasm. Or,

Take *Crumbs of white Bread* two ounces; soften them in *Milk*; and then add of *Barley Meal*, and *Linseed*, of each one ounce; the powder of *Camomile flowers* half an ounce; *Oyl of Roses* an ounce and half; *Water-lilly* half an ounce; the *Yelk of one Egg*, *Saffron* one scruple: mingle them and make a Cataplasm.

But if at any time we have a mind to fit the Medicaments unto the cause, in regard that most commonly in ulcers the pain ariseth from hot and sharp humors; therefore to take away this pain we may administer the juyce or the distilled water of *Nightshade*, *Plantane*, *Henbane*, *Sengreen*, *Oyl of Roses*, *Whites of Eggs*, with *Rose water*: of this those Cataplasms that are made of *Mallows*, *Plantane*, *Nightshade*, and *Oyl of Roses*, are to be laid on; or else an Unguent of the white of an Egg, *Oyl of Roses*, and *Licharge*, wel bruised and mingled together in a *Leaden Mortar*, and afterwards boyled with the Juyce of *Sengreen*, until al the juyce be consumed; or a whol Egg carefully mingled together with the *Oyl of Roses*, and *Turpentine*, in a *Leaden Mortar*; or else the white *Camphorate Unguent*.

If necessity drive us unto *Narcoticks*, then the *Oyl of Poppy*, of *Henbane*, of *Mandrake*, of *Frogy*, or the juyce of *Henbane*, al or any of these may be applied with *Milk*.

## Chap. 17. Of the Ulcers of the Legs, and other particular Ulcers.

**A**ND these things we thought fit (in a compendious way) to speak of Ulcers in the general; which any one may easily apply unto the ulcers of particular parts. Neither do we conceive it to be at all needful, that we should speak any thing more of the ulcers of al the particular parts, since that we have already treated of them in our former Books, as we shal by and by tell you. And therefore in this Chapter we wil speak only of the ulcers of the Legs in special. For it oftentimes happeneth that bad and depraved Humors, especially the *Melancholly*, as wel by their own weight tending unto the Thighs, as by nature thrust and driven down thither (as unto the external parts) do excite ulcers; and this especially happeneth after *Erysipelas* that very frequently infect the skin; and chiefly in Women, where without doubt there is a concurrence of something amiss in the Womb: and I know that in some certain Families such ulcers are so familiar, that al the Women therein (although they seem to be otherwise very wel) have of these long continued ulcers in their Thighs. And therefore by al means possible we are timely to meet with, and prevent these ulcers. For unless they be speedily healed, Nature wil accustom her self to send away al the vicious humors that are bred and heaped up in the whol body unto these parts, which afterwards, if the ulcer be closed up, and the body be not diligently and often purged, wil excite other more grievous Diseases, especially in those that are aged: for if they be neglected, they are wont likewise to gain growth and encrease, to corrupt the parts that lie neer, and to become callous; to that if some speedily

The ulcers  
of the Legs.

dy course be not taken for the healing of them, they afterwards become altogether incurable.

Now that these ulcers may be rightly cured, first of all the body is to be thoroughly purged from the vicious humor; and the fault of the Spleen (which for the most part is here present) is to be corrected, and a Purgation oftentimes to be repeated.

And afterward the Unguent Diapompholyx is to be imposed (which I have ever found to be most efficacious in this kind of ulcer) so long as until there appear a Pus good and white: and then this Emplaster:

Take of the Unguent Diapompholyx, the Emplaster Diapalma, the Emplaster Gryseum, of each one ounce; Gum Elemi. two drams; Sugar of Saturn one scruple: mingle them wel in a Leaden Mortar.

With which two Medicaments I have oftentimes happily and successfully cured the long continued ulcers of the Thighs. Or,

Take Ceruss two ounces, Litharge one ounce, Oyl of Roses one pint, Wax two ounces; let them be carefully mingled in a Leaden Mortar: afterwards add of Tatty prepared with the Water of Nightshade, of Frankincense, and Lead burnt, of each one ounce; and let them be again stirred about in the Mortar, and then make an Unguent. Or,

Take Wax, Rosin, of each one ounce; the Suet of a gilt Pig two ounces; Ship Pitch, Oyl, of each three ounces; Mastick, Frankincense, and Myrrh, of each three drams; Litharge one ounce and half, Ceruss half an ounce. Let the Oyl, Rosin, Wax, and Suet, melt together, and then let them be boyled unto a just consistence: and after let the rest of the Ingredients be added. Or,

Take White Wax, Turpentine, Rosin, of each one ounce; Frankincense, and Mastick, of each two drams; Styraz Calamite three drams; Gum Elemi six drams; round Aristolochy two drams; the juyce of Milfoyl, and Betony, of each half an ounce; Oyl of Roses as much as wil suffice, and make an Unguent.

But let the Wax, Rosin, Turpentine, and Oyls, be first of all dissolved together; after this let the Juices be poured unto them; and when they begin to grow cool, add the Pouders. Or,

Take Oyl of Roses twelve ounces; Ceruss three ounces; Litharge four ounces and half; Frankincense, and Mastick, of each half a dram; Dragons blood half an ounce; Myrrh and Sarcocol, of each two drams: boyl them a little, until they be red; after remove them from the fire, and then dip therein an old Linen cloth; which when it is thoroughly soaked in the matter of the Emplaster may be taken forth and spread abroad to make a Sparadrape.

Touching the ulcers of the rest of the parts, we

have already treated of them in the former Books of this our Practice. To wit, in the first Book, Part 3. Sect. 2. Chap. 18. of the ulcers of the Adnata and Cornea Tunicles of the Eye: *ibid.* Sect. 3. Chap. 3. of the ulcers of the Ears: *ibid.* Sect. 4. Chap. 1. of the ulcers of the Nostils: In the second Book, part 1. Chap. 3. of the ulcers of the Lips: *ibid.* Chap. 16. of the ulcers of the Gums: *ibid.* Chap. 21. of the exulceration of the Throat-pipe: *ibid.* Chap. 22. of the ulcers of the Tonsils: Part 2. Chap. 1. of the ulcers of the Aspera Arteria or rough Artery: *ibid.* Chap. 12. of the ulcers of the Lungs: *ibid.* Chap. 18. of the Fistula's of the Thorax: Part 4. Chap. 3. of the ulcers of the Heart: Book 3. Part. 1. Sect. 1. Chap. 1. of the ulcers of the Oesophagus: *ibid.* Chap. 17. of the ulcers of the Stomach: Part 2. Sect. 1. Chap. 9, & 10. of the ulcers of the Intestines: Part 3. Chap. 5. of the impostumes and ulcers of the Mesentery: *ibid.* Chap. 7. of the ulcers of the Pancreas: *ibid.* Chap. 8. of the Caul: Part 4. Chap. 8. of the Spleen: *ibid.* Part 6. Chap. 8. of the Liver: Part 7. Chap. 11. of the Reins: Part 9. Sect. 1. Chap. 6. of the Bladder: *ibid.* Chap. 9. of the Urinary Passage: Part 8. Chap. 5. of the Testicles: *ibid.* Chap. 6. of the Gads: *ibid.* Chap. 8. & 10. of the Yard: Part 10. Chap. 5. of the Navel: *ibid.* Chap. 7. 11. of the Abdomen: Book 4. Part 1. Sect. 1. Chap. 48. of the Neck of the Womb: *ibid.* Chap. 10. of the Fistula's of the Neck of the Womb: *ibid.* Chap. 11. of the Cancer of the Womb: *ibid.* Chap. 12. of the Gangrene and Sphacelus of the Womb: Sect. 2. Chap. 14. of the Cancer of the Womb: *ibid.* Chap. 19. of the ulcers of the Womb: *ibid.* Chap. 20. of the Testicles in Women: Part 3. Sect. 1. Chap. 7. of the Cancer of the Breasts: Chap. 8. of the ulcers and Fistula's of the Breasts: *ibid.* Chap. 11. of the ulcers of the Teats.

## Chap. 18. Of Burnings.

**W**E may not unfitly unto Ulcers subjoyne Burnings, which do likewise excite and raise ulcers. For oftentimes it happeneth, that by some mischance and unfortunate accident the Members may be scalded, either with water, or with hot boyling Oyl, or melted Metal; or else one may chance to fall into the Fire, into the Water, or into scalding hot Oyl; which whensoever it happeneth, then pain, blisters, and exulcerations are excited.

### The Differences.

Now of such things as are burnt there are three degrees or Differences. For sometimes there is only a heat and pain excited in the part affected by the said burning; and unless that Remedies be forthwith administrated, the Scarf-Skin will be separated



parated from the true Skin, and blisters will be raised, in the which there will be a certain clear water contained: and oftentimes likewise suddenly and in a moment the blister or bladder is lifted up, and the very Skin it self is burnt, dried up, scotched, and contracted together; and yet notwithstanding, there is al this while no Crust or Eschar produced: but at other times the very Skin it self, yea and oftentimes the flesh that lieth under it is burnt, dried up, and an Eschar produced, and the Skin becometh black, loseth somewhat of its sense and feeling; and after that the Eschar is fallen off there is left behind an ulcer sufficiently deep. For fire dissolveth the continuity, and exciteth a pain: and because the moist parts in the Skin are resolved by the force of the fire, and endeavor to expire and breathe forth, but are stil kept in by the thickness of the Scarf-skin, they lift it up, and raise the bladder or blister. But sometimes again there is by the force of the fire some kind of humidity left remaining in the part, from whence the Skin is contracted and drawn together: but sometimes also the moisture of the part is altogether dissipated and dried up, and an Eschar is produced: and this happeneth according to the variety of the things that burn. For Water burneth less than the other; and this Water likewise more or less, according as it is more or less hot. For stubble, straw, flax, and the like, cause no great and vehement burning, unless the burning be long continued. But Oyl burneth more, and so do Fats, Varnish, Pitch, Honey, Wax. And the greatest and most vehement of al burners, are Lead and Tin melted, Iron and other Metals made red hot by the fire, as likewise the very actual Fire it self, Gun-powder, and Lightning. And so likewise by how much the thicker the subject matter of the Fire is, and the more its force and strength is augmented by the concurrence of its many Atomes, and the more it is condensed; and lastly, by how much the longer the action of the Fire is continued, by so much the greater the burning must needs be. But if the fire be in a subject more thin, and so its Atomes be the more dispersed, and but little united, and if its action likewise continue but a short time, then the burning is so much the less.

### Prognosticks.

Touching the Diagnostick Signs there is no need that we speak any thing at al; since that the burning will sufficiently manifest it self. Its Degrees likewise, and how far it hath gone, will sufficiently appear by what was said a little before.

As for the Prognosticks: 1. By how much the lighter the Burning is, by so much the more easily it is cured, and so much the less is the evil that it bringeth along with it: but by how much the burning is greater, by so much the harder it is to cure, and so much the more grievous the evils

that it bringeth along with it. For oftentimes an Inflammation of the part, yea even a Necrosis or Mortification (the Radical humidity being consumed, and the Native heat dissipated) ariseth from thence, ulcers hard to cure are likewise from thence excited, the motion of the part is abolished, and there are filthy and deformed Cicatrices left remaining.

2. Burning by Lightening is likewise very dangerous, and for the most part deadly.

3. By how much the purer the Body is, by so much the more easily is the burning cured. But if the Body be either Plethorick, or Cacochemical, then from the pain and heat there is very easily caused an efflux of the humors; and from thence Inflammations, putrid ulcers, and other evils are excited.

4. The Burning is likewise sometimes more, and sometimes less dangerous, according to the Nature and condition of the parts affected. For if there be but only one part burnt, there is then less danger than if many parts, or the whol body be burnt. For when many parts, or the whol body be burnt, it is very rare that the persons thus burnt should ever be perfectly wel and sound; but most commonly they die miserably by the very vehemency of the Symptoms.

5. If the burning be so deep that it reach even unto the greatest Veins, Arteries, and Nerves, it is then dangerous. For when the exciccated Vessels are contracted and shut up, the blood and the Spirit cannot then flow unto the affected part; from whence there is caused an Atrophy, a Gangrene, and a deprivation of sense and motion.

6. The burnings of the Abdomen are not cured without much difficulty: for the Skin is there softer; and those Muscles by reason of their various motions are variously extended and contracted.

7. If the burning reach even unto the Intestines, it is then deadly.

8. The burning likewise of the Groyns is very dangerous, since that those places are moist, and therefore the more fit to receive the afflux of humors.

9. The burnings of the Eyes are also dangerous. For although they be but light; yet notwithstanding they may produce either a stark blindness, or a deprivation of the sight, or at least a diminution thereof.

10. If the hairy parts be ever a whil grievously burnt, they always continue smooth and slick: for hairs are never generated in that hard Cicatrice that is brought over the affected part.

### The Cure.

Indeed some there are that from the ordinary and well known Axiom of Physicians (viz. That Contraries are the Remedies of Contraries) are of opinion, that such Members as are burnt ought to be cooled; and therefore they think that unto those

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those parts that are burnt there must Coolers be immediately applied. But this their opinion hath its original from that vulgar but false Conceit, viz. That the burning is only an alteration, and the introducing of a hot quality; whereas notwithstanding the very fire itself, and likewise its Atomes, are communicated unto the part that is burnt, and an *Empyreuma* (as all of them are forced to confess) is produced: for what, indeed, else is this *Empyreuma* (which all of them tell us ought to be called forth) then the small parts or particles of the very fire, that have penetrated themselves into the burnt part: and Experience itself teacheth us, That cold things will not cure burnings; but that (on the contrary) by the said Coolers (the fiery particles being thereby thrust down much lower) the pain is wonderfully augmented, and inflammations, yea and the Gangrene itself, and the Sphacelus excited: but that such things as are hot, and that call forth the *Empyreuma*, are very helpful: from whence likewise it is (as we all well know) that the burnt parts are not to be plunged into cold water, but rather to be put somewhat neerer unto the fire. Which although that *Platerus* seem to find fault therewith, yet use hath taught even the very vulgar the truth of this; and *Aristotle* long since took notice hereof, as appeareth in his Sect. 2. Problem. 56. Neither are those things that are applied hot, applied in the nature of Anodynes, since that all Anodynes will not do it, as by and by in the Cure it will appear: but only those of them which have virtue and power in them of calling forth the *Empyreuma*. But now similitude and likeness begetteth attraction; and the external fire calleth forth the intrinsical fire, that is to say, that very fire that it self conveyed into the burnt part; as *Ambrose Parry* tells us very truly, in his Book 11. Chap. 9.

In the Cure therefore of Burnings, let the first care be to call forth the *Empyreuma*: to wit, in the same manner, like as we have told you in Part 1. Chap. 15. touching Kibes, that the cooled parts are not rightly cured if they be put neerer unto the fire, or plunged into hot water; since that hence the pain becometh so much the more intense and vehement; yea and that oftentimes a Gangrene and Sphacelus are excited; but if they be first rubbed with Snow, or dipt into cold water, then the cold is drawn forth: so if the *Empyreuma* be called forth by those things that are hot (which is done by means of the similitude or likeness) then this Malady is soon taken away. Which that it may be rightly done, the Cure is to be instituted and ordered according to the degrees of the Burning above propounded.

The Cure  
of a light  
burning.

First of all therefore, if the Burning be but light, we must prevent what we can the breeding and arising of Pustules or blisters: for if this be done, the sick person is then already freed from all

the evil of the burning. But now this is to be speedily done; and therefore whatsoever Medicament we have ready at hand, we must forthwith make use thereof: and therefore the Member (if the nature and condition thereof will so bear it) is to be put a little neerer unto the fire, or else deeply plunged into hot water; or else fomented with a Sponge, or a Linen cloth doubled, and then well soaked in warm water, that so the *Empyreuma* by reason of the likeness may be extracted; or else immediately a Linen cloth dyed in Varnish is to be imposed upon the burnt Member; or a Linen cloth well wetted in the Ley or water in which unslaked Lime hath been extinguished. And then presently Onions bruised in a Mortar with Salt are to be laid upon the burnt part: or else this Unguent. Viz.

Take of a raw Onion one ounce and half; Salt, Venice Sope, of each half an ounce: mingle them in a Mortar, pouring in unto them as much of the Oyl of Roses as will suffice, and make an Unguent. Or,

Take Venice Sope three ounces; raw Onion one ounce; Salt six drams; the Oyl of Eggs half an ounce; Oyl of Roses and sweet Almonds, of each one ounce and half; the Mucilage of Quince seeds one ounce: mingle them, and make an Unguent. Or,

Take the green Rind of the Elder tree, or the first shoots of the Elder; let them be well bruised, and then boyled in Butter that is new and unsalted, and then strain them. Or,

Take Unslaked Lime often washed in Rose-water, and with the Oyl of Roses make a Liniment. Or,

Take Oyl of Linseed, Oyl of Olives, of each one ounce and half; Salt half an ounce; the Whites of two Eggs: Mingle them, &c. Or,

Take May Butter unsalted, Venice Sope and Varnish, of each a like quantity: Mingle them, &c. Or,

Take Oyl of Roses three ounces, Camphire three drams, the Whites of three Eggs, and mingle them. Or,

Take the Juicy of Onions three ounces; Oyl of Roses, fresh Butter, the fat of a Hog, of each one ounce; Lime washed in Rose water half an ounce; the Mucilage of Quince seeds extracted with Rose water one ounce; a little Turpentine, and make a Liniment. Or,

Take the middle Rind of green Elder one ounce and half; the juicy of the first shoots of Elder one ounce; Oyl of Linseed and Roses, of each six drams; Varnish, and Hogs Fat, of each one ounce; Wax one ounce and half; Frankincense pulverized one ounce; boyl them a little while in Water; and when they be cooled, gather the fat together, and make use thereof instead of an Unguent.

Of Lime often (even twelve times) washed, and the former water alwaies thrown away, there may be made many Unguents very good against Burnings: for either it is mingled with fresh Butter, or Oyl of Roses, or Oyl of St. Johns wort: and sometimes there are other things added, as the Mucilage of Quince Seeds, of Fleawort, the white of an Egg, and white Wax. These things are likewise very good.

Take the Juyc of the middle rind of the Elder one ounce and half, Cream of Milk one pint; boyl them to a Just consistence; and then add of the Mucilage of Quince Seeds, the extracted water of Nightshade, unsalted Butter, and Ceruss, of each half an ounce, mingle them, and make an Unguent. Or,

Take Oyl of Linseed four ounces, new Wax two ounces, whites of Eggs as much as wil suffice; mingle them over the fire, and make an Unguent.

For the healing of all kind of Burnings, this is likewise very prevalent.

Take Oyl Olive one part, whites of Eggs two parts; let them be shaken together with all exactness and care, and thoroughly mingled together, that so a white Unguent may be made thereof; with the which the burnt place is oftentimes every day to be anointed with a Capons Feather, even until the Crust shal fall off of its own accord; neither is there here any External ligature to be made use of.

Ambrose Parry (in his Parisian Nosocomium) writeth, that this following hath been made use of with very good success:

Take Lard small shred one pound, let it melt in Rose water, and then let it be strained through a thin Linen Cloth: let it be washed four times in Plantane water, or some other convenient water; and afterward add the Yelks of three new-laid Eggs, and so make an Unguent. Or,

Take Crawfish as many as you please: bruise them to pieces alive in a Mortar; and afterwards take new fresh Butter, make it boyling hot and then scum it: while it is yet hot, cast in the mashed Crawfish and boyl them until they wax a little red; afterward strain it, and let this Unguent be kept for use, for it is singularly good.

Omnibonus Ferrarius in his fourth Book of the Art of Curing Infants, and Chap. 25. commendeth this that followeth as a rare secret, and such as he himself had oftentimes made trial of with very good and happy success, although the Pustules were already raised. Viz.

Take the whites of two Eggs, Oyl of Roses two ounces, Rose water one ounce. Mingle them together exactly.

Afterwards let a white linen Cloth, or silk (that is very thin woven) being first thoroughly wet and soaked in that Liniment be laid upon the burnt part, and not at all taken off until the Malady be healed; but only let the Linen Cloth be

again anoynted over and wel wet with the said Liniment, twice or thrice every day. After the fourth day is past, in the place of the Whites of Eggs take the Yelks of the same; and continue the use hereof untill there be seen to appear the breeding of a new Scarf-skin: and then with a pair of Cizers let the little Cloth be from day to day cut off by some and some, where it shall appear that this new Scarf-skin is generated, until at length the whole Cloth be cut away; which when it is wholly taken away, there will appear no sign or mark at all of any hurt or burning. Or,

Take the middle rind of the Elder as much as you wil; boyl it in the Oyl of Olives; when it is strained, add of Ceruss two parts, burnt Lead, and Litharge, of each one part; Mingle them exactly in a Leaden Mortar.

And yet nevertheless this is to be observed touching al Unguents, that they ought to be so ordered, that they may not stick over stiffly and too close unto the part, but so that they may easily be cleansed and removed. Neither indeed wil these kind of Ulcers admit of a strong and exact cleansing; but they must only be wiped clean by putting a fine thin and soft Linen Cloth upon the part, and so cleansing it from its filth and purulency. But if the Unguents stick too close, they then cause much pain unto the Party, and much trouble to the Physitian in his cleansing away of the filth and impurities.

If the Blisters or Pustules be elevated, and yet notwithstanding the Malady never a whit more grievous than before, they are not then immediately to be opened: for if they be presently opened, by reason of the Skins being made naked and bare, there wil a pain be excited, and the Cure wil be the longer ere it be wrought. But at length on the third day, when the new Scarf-skin beginneth to be formed and bred, then they are to be opened: but this opening must not be long in doing, lest that the humor within contained be made the sharper, and so it corrode and eat through the Skin.

Unto this first degree there belongeth (for the most part, for if there be greater store of the Gun-powder, the hurt wil be so much the more vehement) that burning that happeneth by means of Gun-powder; which oftentimes hath this peculiar unto it, that some Corns of the said Powder wil remain and stick fast in the Skin of the Face, and there cause a great deformity. Which if it so chance (for otherwise if the part be only hurt by the flame of the said Powder, and that there be no Corns thereof driven into and fixed in the Skin, it is then to be healed and cured like as osher Burnings) forthwith the Corns of Powder are to be drawn forth with a Needle, or some other Instruments fit for the purpose: but if they cannot be al of them presently drawn forth; we must then permit

permit the Pustules to be lift up; for so by this means some of these grains of Powder may be the more easily drawn forth. But if the Chirurgion be not presently called at the very beginning, and if after the burning is quire healed there remain stil some blemishes, then there is to be laid on a Vescatory of Cantharides and Leven; and the Bladders or Blisters that are excited are to be cut with a pair of Cizers, the Powder to be taken forth, and the place (the like hereunto is to be done likewise at other times in such like burnings) is carefully to be washed from its blacknels with the Decoction of Fenugreek and Camomil flowers. And afterward this or the like Liniment is to be made use of. *Viz.*

Take Gum Elemi one dram; Dissolve it in the Oyl of Eggs, of Roses, and of white Lilies, of each two drams; Unguent Basilicon thre drams; unsalted Butter one ounce; and mingle them.

Gulielmus Fabricius in his Book of Burnings, Chap. 6. maketh use also of the Powder of Precipitate.

But *Paræus* doth rightly inform us, that this Gun-powder doth sometimes so penetrate into the Skin and the Fleth (these notwithstanding being not greatly hurt) that it cannot by any Remedies be taken or drawn forth, neither by Phæignims, nor by Vescatories, nor by Scarification, nor by Cupping-glasses, so that oftentimes there remain some certain footsteps and prints thereof; as experience it self testifieth.

But for the moderating of the pain, let the parts that lie neer be anoynted over with this Unguent.

Take Oyl of Sweet Almonds, of Roses, of white Wax, of each one ounce; let them melt over the fire; and then ad of Camphyr one scruple, and a little of the Mucilage of Quince seeds; Mingle them, &c.

And hither belongs that Burning that happeneth from Lightning. But now in regard that Lightning hath Joyned therewith a Malignant & poysonous quality (which manifestly appeareth from the stinking smel it carrieth along with it, and that great power it hath to hurt the body, yea oftentimes to Kill; as also by this, that even the Dogs wil not touch the flesh or Carcasses of those Creatures that have been destroyed by Lightning:) therefore when any one hath been blasted and burnt with Lightning, then the Patty is immediately to be put into a Swear, by giving of him some of the Powder of Bezoar, or Treacle, or Bezoar Water. The Arteries also, the Lips, the Tongue, and the Nofethrills, are to be anoynted with Wine in the which Treacle hath been dissolved; and unto the Hand-wrists and the Heels there ought to be applied Cordial Epithems: but unto the burnt place there are to be applied Unguents made of Onions, the Leaves of Rew, and

Treacle: there are likewise to be administered Cordiall Syrups, Conservees, and Pouders.

If there be an Elchar drawn over it, it is speedily to be removed with a Penknife; and then such a like Unguent as this is to be applied.

Take of the Powder of the Root of Swallow-wort, of Angelica, of each half an ounce, the Leaves of Rew, and Water-Germander, of each one dram; Treacle two drams; Treacle Spirit thre drams; Honey of Roses two ounces, mingle, &c.

The Ulcer being cleansed, this sarcotick Powder is to be strewed thereon for the breeding of flesh.

Take Roots of Angelica, and Swallow-wort of each one ounce; Myrrh, Mastick, Frankincense, the Leaves of Water Germander, of each half an ounce; Aloes succotrine two drams; make a Powder, which may be sprinkled with the Juice of the true and right Nicotian or Tobacco and Sanicle; and hereof Trochisques are to be made, which must be dried in the shade, and (when there is occasion) again reduced into a Powder.

But then if there be likewise any bones broken, then we are not to make use of those extraordinary and common Astringent Cataplasms (lest that the evaporation of the poyson should be hindered) but some other, of Bean meal, Barly meal, of Lupines, of Angelica root, of Swallow-wort, of Rew leaves, Leaves of Water Germander, and Treacle: and this is to be renewed day by day, untill such time as the strength of the poyson be overcome and disuffed. And upon the place there is a Defensive to be put, lest that the poysonous vapours through the vessels ascend up unto the Heart.

But if the Burning be so great and vehement, that there be not only bladders or Blisters raised, but that the Skin be likewise burnt, overdrised, and drawn together, then those Medicaments that only draw forth the *Empyreuma* wil not suffice, neither are they alone to be applied; but there are likewise to be administered that mollifie and soften the Skin that is so much dried. And therefore all the Pustules are forthwith to be cut and opened, that so the hot and sharp humor may flow forth; and then such a like Unguent is presently to be laid on upon the place affected,

Take of the Basilick Unguent one ounce, Oyl of Roses, of Almonds, of white Lilies, of each three drams; Yelke of two Eggs; Mingle them &c. Or,

Take of new fresh Butter, the new and fresh fat of a Hen, of each one ounce; new Wax, and Oyl of white Lilies, of each half an ounce; let them melt upon the fire, and then mingle therewith of Saffron one scruple, Mucilage of Quince seeds one ounce; Mingle them, &c.

The Cure of Burnings of the second degree.



Or else this of *Fabricius* :

Take *New fresh Butter* washed in *Rose-water* three ounces ; *Oyl of Violets*, of the *Yelks of Eggs*, of *sweet Almonds*, of each half an ounce ; *Barley Meal* one ounce and half ; *Saffron* one scruple ; *Mucilage of Quince seeds* one ounce ; *Wax* as much as wil suffice, and make an *Unguent*. Or else another of those things that were before mentioned. Or,

Take *Litharge*, *Ceruss* or *Vermilion*, as much as you please ; let them boyl in *Vinegar* ; the *Vinegar* being passed through the filtering bag, add of the *Oyl of Violets*, or *Oyl of Eggs*, a sufficient quantity ; and let them be carefully mingled together : And afterward,

Take the *Pulp of sweet Apples* roasted under the *Embers* two ounces ; *Barley Meal*, and *Fenugreek seed*, of each half an ounce ; and with *Milk* make a *Cataplasm* ; unto which add of *Saffron* half a scruple : mingle, &c.

But upon the burnt place such a *Defensive* is to be laid on.

Take the *Powder of Bole-armenick*, *Dragons Blood*, *Pomegranate flowers*, *Flowers of red Roses*, of each half an ounce ; *Oyl of Roses* three ounces ; *Wax* one ounce and half, a little *Vinegar*, and make an *Unguent*.

And then the Member it self is afterward to be bound about with a *Swathband* that hath been wel wet in *Oxycrate*, or else a *Linen cloth* thoroughly moistened in the said *Oxycrate* is to be imposed upon it, that both the pain may be mitigated, and the influx of the *Humors* hindered and prevented. They commonly make use of that rare *Brine* or *pickle* in which the *Cabbage* is kept and preserved.

*Cure of  
burning of  
the third  
degree.*

If (lastly) the *Skin* be not only somewhat dried, but that all the *Radical humidity* thereof be wholly consumed, and the *Native heat* altogether scattered ; yea and the very *flesh* it self, and the *Veins*, and the *Arteries*, and the *Nerves* be burnt (so that there be cause to fear that the part may *Gangrene*) in the first place, then the *Pustules* and all the *blister* to be cur, and the water contained in them to be dried up. And then afterward we must do our endeavor that the *Eischar* may forthwith the first or second day be separated ; or if this may not be done, it is then to be cut in divers places with a *Pen-knife*, that so there may be a passage and way made for the issuing forth of the humor, and the admission of the Medicaments unto the part affected : and therefore instantly the *Liniment of Gulielmus Fabricius* (that is anon to be described) ought to be laid on. Or else,

Take *unsalted Butter* washed in *Rose-water* three ounces ; the *Basiliq* *Unguent* one ounce ; the *Mucilage of Quince seeds* extracted with *Rose-water*, *Oyl of sweet Almonds*, and *white Lilies*, of each half an ounce ; the *Yelk of one Egg* : Mingle, &c. Or,

Take *fresh Butter*, *Oyl of Roses*, *Hogs Fat*, of each one ounce ; the *Yelks of two Eggs* : mingle, &c. Or,

Take the *Mucilage of Quince seeds* extracted with the water of *Parietary* or common *Pellitory* of the wall two ounces ; *Oyl of white Lilies* one ounce, the *Yelk of one Egg*, *Wax* as much as wil suffice to make a soft *Unguent*.

But upon the *Linen cloth* there must be laid on a little of the following *Emulsion* :

Take *Gourd seed* bulled two ounces ; *Quince seed* two drams ; *Fenugreek seed* one dram ; pure *Water* three quarts ; make an *Emulsion* : adding hereunto of *white Venice Sope* half an ounce ; *Camphyre* half a scruple : Mingle them, &c.

*Defensives* are not here so fit and convenient, (especially if the part begin already to swell up, and most of all if there be danger of a *Gangrene* to follow) in regard that they hinder *Transpiration*.

If there be a *Gangrene* already begun, then the *Cure* is to be ordered and ordained, as we shal further shew you in the following Chapter : and if there be any thing that is quite burnt, it is timely to be separated, lest that the putridness corrupt the sound parts.

When by the *Eischar* that which was burnt shal be separated, the ulcer is then to be cleansed, filled with *flesh*, and closed up with a *Cicatrice* ; as we have hitherto told you in the *Cure of ulcers*, and as we shal further shew you in the following Chapter. But yet let not those things that you administer to produce the *Cicatrice* be over dry, lest the *Cicatrice* be made foul, unsightly, and rugged.

*Gulielmus Fabricius* (to cause the *Cicatrice* in the burnt places) made use of these things following :

Take *Emplast. Palmei* two ounces ; *Hens Fat*, and *Goose Fat*, of each half an ounce ; let them melt together : and then mingle therewith of burnt *Allum*, *Calcined Lead*, *Litharge of Gold*, *Lapis Calaminaris*, of each one dram : let them be bruised together in a *Leaden Mortar*, adding thereto of the *Mucilage of Quince seeds*, and *Fenugreek*, of each a sufficient quantity, and make an *Unguent*.

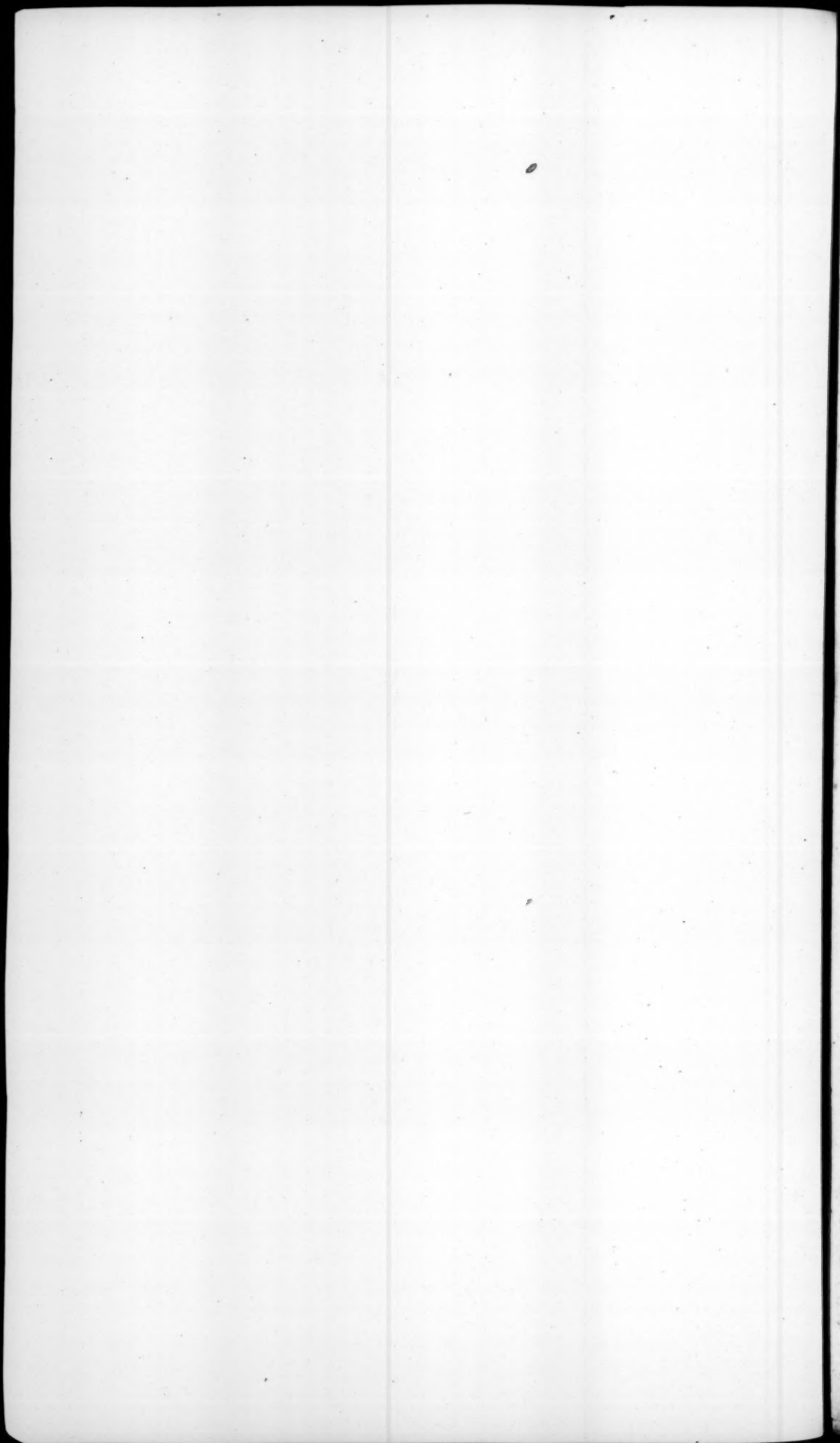
He likewise in this case very often made use of the *Alabastrine Unguent* (and that with singular benefit) of which this is the Description :

Take of the *Alabastr stone* calcined one ounce and half ; of the *white Pumice stone* calcined half an ounce ; burnt *Allum* two drams ; make of them all a very smal and fine *Powder* : And afterward,

Take *white Wax*, *Goats Suet*, the *Oyl of sweet Almonds*, and *white Lilies*, of each one ounce ; *Oyl of the Yelks of Eggs* half an ounce : make an *Unguent* that mollifieth, and asswageth pain, and draweth over the part a fair *Cicatrice*.

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If the Veins, and the Arteries, and the Nerves likewise be burnt (lest that the part should be surpris'd with an Atrophy by reason of the want of Aliment, but that the Vessels that were streightly shut up may be opened) they are to be anointed over with this following Unguent.

Take the *Juyce of Earthworms* two ounces; *Mans Fat, Hens Fat, Bears Fat*, of each one ounce; *Spirit of Wine* two drams: Mingle them, &c.

If the parts that are naturally severed and disjoyned be burnt, as the Eye-lids, the Lips, the Fingers, (lest that they should grow together) dry Liniments, or moist thin little plates of Lead are to be put betwixt. And then at length there is likewise a special regard to be had unto the parts affected, in the choyce of the Medicaments. For it wil be altogether unfit and improper to apply unto the burnt face those Medicaments that are made of Onions, liquid Sope, as also Varnish, in regard that the Eyes may hereby be easily hurt. And therefore upon the Face we must lay on the Unguent of *Omnibonus Ferrarius* (before mentioned) or some other of Sope, that is made thicker, that so it may not flow and run abroad. As,

Take *Oyl of Roses*, and of *sweet Almonds*, of each half an ounce; *Venice Sope* one ounce: Mingle them, &c.

*The burning of the Eyes.* If the Eyes be hurt, then let there instantly be dropped into them *Womans Breast-milk*, or any other Milk blood warm: Or let such a like Collyrie be administred:

Take *Rose-water* three ounces; *Plantane Water* one ounce; of *Quince seeds*, and *Fenugreek*, of each one dram: let them stand a while in a hot place, and then let them be strained.

If the burning be vehement, & a crust be excited, we must then be very careful that the Eye-lids be not drawn back, which wil cause a great deformity: and therefore a Fomentation by Emollients is to be ordained. As,

Take *Roots of Marsh-mallows*, of common *Mallows*, of each six drams; the *Leaves of Marsh-mallows*, and common *Mallows*, the *flowers of Melilote*, and of the *Elder tree*, of each half a handful; *seeds of Fenugreek*, and *Linseed*, and *Quince seed*, of each half an ounce; boyl them, and let the Eye-lids be fomented with the Decoction.

Afterwards let them be anointed with this Unguent:

Take of the *Mucilage of Quince seeds*, and *Fenugreek*, of each two drams; *Oyl of sweet Almonds*, *Mans Fat*, of each one ounce; *Gum Elemi* one dram: let them melt over the fire, and then let them be strained. Or,

Take *Oyl of white Lilies*, *Oyl of Eggs*, of each half an ounce; *Mans Fat* six drams; *Gum*

*Elemi* two drams; *new Wax* one ounce; *Saffron* one scruple; let an Unguent be made hereof.

But then likewise let the Skin be oftentimes extended with both the Hands.

If the Joynts be burnt (in regard that they are parts almost bare and void of flesh, nervous, and endued with an exquisite sense) lest there should be caused an afflux of humors,

*The Burning of the Joynts.*

and so a more grievous Malady should thereupon follow, Universal Evacuations are not to be omitted. But let not the Topical Remedies be over sharp, as are those of Onions, Sope, and the like; but let them be mild and Anodyne: and great care must be taken to prevent the contraction of the Nerves, and the incurvation or crooking of the Joynt. As,

Take *Oyl of white Lilies*, and of *sweet Almonds*, and of *Earthworms*, of each one ounce; the *Fat of a Hen*, and *Mans Fat*, of each half an ounce; *Unguent Dialthea* six drams; *Gum Elemi* two drams: Mingle them and make an Unguent.

*Fetula's* likewise, or other Instruments, gently, and without causing any pain, to be fitted unto the Member, to prevent the contraction of the same. But if the Nerves shal chance to be contracted, and the joynts incurvated, then (Generals being first premised) the part affected must first of al be fomented with an Emollient Decoction, made of the Root of *Marsh-mallows*, *Briony Roots*, *white Lily Roots*, the *Leaves of Marsh-mallows*, and common *Mallows*, *Ground-pine* or *Herb Ivy*, *Flowers of Camomile*, of *St. Johnswort*, *Linseed*, and *Fenugreek seed*.

Afterward let it be anointed with this following Unguent.

Take of the *Unguent Dialthea* one ounce; *Mans Fat*, *Hens Fat*, and *Goose Fat*, of each half an ounce; the *Juyce of Earthworms* one ounce: and mingle them.

And upon the part there is to be imposed the Emplaster *Diachylon simplex*, and the Emplaster de *Melilot*, or the *Melilote Plaster*.

And withal likewise the contracted Member is with fit and convenient Instruments sensibly and by degrees to be extended; such Instruments as these we speak of are to be found lively set forth and delineated in the Chiturgery of *Gualtherus Ryff*, and in *Gulielmus Fabricius* his Tract of *Cumbustions*; and thither we refer you for the sight of them.

If the Groins be burnt, (in regard that those places are moist, loose, and very apt to receive fluxions; and because that thither the humors do very easily flow by reason of the vicinity of the Glandules, and that thereupon a Gangrene is there soon excited) let the Medicaments be there more dry than in other parts. And therefore

*The burning of the Groins.*

fore

fore if there shal break forth no Pustules, then the Medicaments that are made of Sope, Onions, and Lime, are very usefull. But if the Pustules be already raised up on high, then let them be timely and speedily opened: and afterward let this Unguent be imposed.

Take Unguent of *Roses* one ounce, Unguent *Basilique* six drams, Oyl of the Yelky of Eggs, and white Lilies, of each half an ounce; Myrrh and Aloes, of each one dram; Mingle them, &c.

Upon the Unguent let the whol part be covered with such a like Cataplasme;

Take Barley meal, Bean meal, and that of the Bitter Vetch *Orobis*, of each one ounce, Pouder of *Roses* half an ounce; with Honey of *Roses*, or Oxy-mel simple, make a Cataplasme.

But if the burning be great, so that there be fear of a Gangrene, then those Medicaments are to be made use of that shal be prescribed in the Chapter following touching a Gangrene.

There are likewise oftentimes very unsightly and deformed Cicatrices left remaining after the burning, by reason of the extraordinary drying caused by the Fire. If this be feared

it is then to be prevented by applying of Emollients during all the time of the Cure. But those Remedies that are wel enough known to be over drying we ought not to make use of them for the producing of the Cicatrice: to wit, the part is to be fomented with that Decoction that was but even now propounded, as touching the Contraction of the Members. And afterwards the part is to be anoynted with this Liniment:

Take Oyl of *Roses*, and white Lilies, of each half an ounce; Mans fat, Hens fat, the fat of the Fish *Thymallus*, of each three drams; Oyl of Myrrh half a dram, the Juyc of Earth-worms half an ounce; Mingle them.

### The Diet.

And withall let there be a good and right Course of Diet appointed unto the Patient. Let his Diet therefore be such as is Cooling and moistening; and let the sick Person eat Broches, in which Endive, Sorrel, Lettice, and Borrage were boyled: and on the Contrary let him abstain from those things that are hot, sharp, and salt: let him drink no Wine, but Barley Water, or smal Beer. If need require, there may likewise be appointed the opening of a Vein, and the Purgation of the Body.

## Chap. 19. Of a Gangrene and Sphacelus.

I Ndeed a Gangrene and a Sphacelus are neither Tumors nor Ulcers: neither (to say truth) is Sphacelus so much as a Disease; but only the very Mortification and deadning of the part; but then the Gangrene is a notable and extraordinary Distemper, tending unto the aforesaid Mortification; which may likewise invade the Party without any Tumor at all; yet notwithstanding because that most frequently it followeth Tumors, and especially Inflammations, there are some therefore that among Tumors do treat of the Gangrene, and the Sphacelus. But there are others, who (because that when the part is Gangrenated an Ulcer necessarily followeth thereupon; and in regard that after the Sphacelus there is an Ulcer left remaining) treat of the Gangrene and Sphacelus among the Ulcers: and these we chuse to follow, and therefore it is that in the end of this Tract touching Ulcers, we thought fit to say something of the Gangrene, and the Sphacelus.

Now the Gangrene (which they call the Fire of *Marcellus* or *St. Anthones* Fire) is an imperfect Mortification or Corruption of a part, tending unto a *Necrosis*, that is to say, a deadness or Mortification; unto which unless there be speedy and fit Remedies administered for the Curing thereof, the Member becometh altogether dead, loseth all sense and life, and feelth nothing at all, whether it be Cut or burnt: which *Necrosis* being already thus far perfected is by the Latines termed *Synderatio*, and by the Greeks *Sphacelus*; so that these two Maladies differ not but only in their greatness. For in a *Sphacelus* the part is wholly deprived of all sense and life, and is altogether dead: but in a Gangrene there is not as yet present a perfect Corruption of the part. And in regard that in a Gangrene there is not as yet so great a Corruption, neither a perfect and absolute Mortification, therefore it only invadeth the softer parts: but now the *Sphacelus* (in regard that it is a perfect, entire and absolute Corruption of the part) doth not only invade the softer parts, to wit, the Skin, the flesh,

the Veins, the Arteries, and the Nerves; but it likewise corrupteth and spoyleth even the very bones themselves. And yet nevertheless we acknowledge, that in the *Sphacelus* likewise the softer parts are at first only corrupted, and that not the bones, but the Veins also, and the Arteries, and the Nerves, remain and continue safe and sound; but yet if the putrid part be not speedily separated, it cannot possibly be avoided but that the more solid parts must likewise be infected with this putridness.

A Gangrene what it is.

The difference between a Gangrene & Sphacelus.

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*The Causes.*

Whenas therefore in the Gangrene and Sphacelus there is caused a Mortification of the Member; in the Gangrene indeed one that is but only beginning; but in the Sphacelus a perfect and absolute Mortification; and that the mortification of the part dependeth upon the destruction of the innate and natural heat (as on the contrary, the life of the part dependeth upon the preservation and safety of the said Native heat) we conclude that whatsoever destroyeth the Native heat of the part, that same may likewise be accounted a cause of the Gangrene and Sphacelus. Now the Native heat is destroyed, when by its contrary it is either corrupted or suffocated, or dissipated, or altogether extinguished for want of Aliment. It is destroyed by its contrary, either acting by a manifest quality, and cold; or else by a secret and hidden quality, as by poyson. It is suffocated, when the transpiration is hindered: It is dissipated by a greater heat: It is extinguished, if necessary food and sustenance be denied: so that there are (as you see) five causes of the Generation of a Gangrene and Sphacelus: to wit, overmuch cold, a poysonous quality, the hinderance of transpiration, a vehement external heat, and a defect of Aliment, and the heat flowing in.

For first of all we see that oftentimes (in the Winter) those that take Journeys in the Snow and Ice have the extreame parts of their feet, and of their hands, their Ears, and their nostrils almost dead with cold, by reason of the vehemency thereof: and thus it happeneth sometimes also, that by reason of Medicaments over cooling in a Phlegmone, or an Erysipelas, carelessly and incautiously administered, the part is taken and surprised with a Gangrene, or a Sphacelus: although I had rather refer this case unto transpiration hindered.

There is also a very great power of destroying the innate heat in those things that are poysonous, and such things as destroy our Bodies by a secret and hidden quality. For sometimes the humors in our bodies do so degenerate, and acquire so great a malignity, that they bring a *Necrosis* or deadness unto those parts: whether they are by Nature thrust; as we see it done in a Carbuncle. And so in like manner the biting and stings of poysonful Creatures do corrupt and putrefie the parts. And the same also is done by the Seprick Medicaments, which if they be not wisely and carefully administered have in them a power of corrupting the flesh; especially in places that are hot and moist, as in the Emunctories; the privy parts, and the other places that are like unto these.

Thirdly, Transpiration hindered exciteeth likewise a Gangrene. For whereas our heat standeth in need of perpetual ventilation and cooling, if this be denied, it is suffocated by the abundance of Vapors. And for this very cause in great In-

flammations, and especially in the moist parts, there very frequently happeneth a Gangrene, the Native heat being extinguished; as otherwise likewise we see that a little flame is extinguished and put out by casting thereon good store of water; and that the flame is stifled if it be put under a Cupping-glass that hath no hole or vent in it, or any other Vessel whatsoever that is kept covered, which is preserved in a Cupping-glass that is perforated, or any other Vessel that is open. And this chiefly happeneth, if in Feavers (especially if they be malignane) the humors be with violence either thrust forth, or that of their own accord they rush unto any one part. And so I remember that here a certain Citizen that was taken with a malignant Feaver, from the humors that were thrust down unto the *Scrotum*, had the said *Scrotum* all of it so inflamed and mortified with a Sphacelus, that there was a necessity of cutting off the whole *Scrotum* or Gonds, so that the stones hung down altogether naked and bare; which yet notwithstanding (the Gangrene being cured) became afterwards covered again with flesh that grew out of the Groyns. That Inflammation likewise which the Gangrene followeth is sometimes caused by Wounds, and these not alwaies great, but oftentimes also very small and sleight Wounds, that seem inconsiderable, and of no moment. So *Henricus ab Heer* relateth in the first Book of his rare *Physical Observations*, Obser. 12. That he was present and saw a man fifty nine years of Age, who having pared the Nails of his Toes, and cut them to the quick, was presently surprized with a Gangrene, and within a very short space died thereof. And he telleth us likewise of two other eminent persons, who being desirous to have the hard and callous brawniness of their feet pared away, were both of them taken with a Gangrene that within a short time caused their deaths. And this may likewise be done by Emplastick Medicaments, in great Inflammations, and especially if they be unseasonably applied in moist places, which frequently produce there a suffocation of the Native heat.

Fourthly, A preternatural heat likewise, and such as is extraneous and from without produceth the Gangrene, by waisting the Radical moisture, and the Native heat: and so many times a Gangrene followeth after great burnings.

And lastly, A Gangrene ariseth from the defect of Aliment, to wit, the blood, and the spirit flowing in, that is altogether necessary and requisite for the cherishing of the Natural heat implanted within. For whereas the innate heat standeth in need of continual Nourishment (as the flame doth of Oyl) if this be denied, it languisheth and is extinguished; like as is the flame when the Oyl in the Lamp faileth. And in this manner a Gangrene happeneth unto the external parts of the body, sometimes in an Atrophy, Consumption, and the like Chronical and long continued Diseases.

that extenuate the body. And for this very cause it is that when the greater Joynts are put out of Joynt, if they be not again wel and rightly set, then the disjoynted bone presseth together the vessels that lie neer, and hindereth the influx of the blood, and of the Spirits into those parts that lie underneath; from whence there followeth a leanness and consumption of the said parts, and in process of time very frequently a Gangrene also. And so it is found by experience, that from a hard Tumor about the *Vena Cava* (where parting several waies it descendeth into the Thighs) pressing the same together, and hindering the descent of the blood into the Thigh, a Gangrene very often ariseth. And in this manner a Gangrene likewise happeneth, if any part be too hard and long bound about with Ligatures and bands; or else if Medicaments that are over astringent shal be imposed upon any part.

### Signs Diagnostick.

It is no hard matter to know the Gangrene. For the color of the part beginneth to be changed and turned unto black, the flesh to grow loose and flabby, the pulse and sense to be diminished, and the heat to be abolished. Which said Symptoms the more the Gangrene sendeth unto a perfect corruption and a Sphacelus, by so much the more are they increased and made more evident. For in a perfect and absolute corruption and Sphacelus the life and sense of the part are wholly abolished; there is no pulse at all to be perceived; the part, whether you cut or burn it, is insensible of pain; the flesh appeareth to be cold, is made soft and flabby, so that it yieldeth unto the touch when it is pressed by the fingers; which yet nevertheless, after it is thoroughly dried, becometh black, wan, and altogether deadned, and it yieldeth a noysom and stinking savor like that of a dead Carcase; and the skin if it be taken up with the fingers seemeth to be separated from the flesh lying underneath it. And here *Ambrose Parry* adviseth every Physitian, that when he hath discovered by these signs that there is a Gangrene, and a Sphacelus, he no longer defer the doing of what is to be done, neither suffer himself to be deceived by the motion; some whereof is oftentimes still left remaining even in a mortified and dead Member. For in a Sphacelus the corrupted parts are moved, not by the motion of the whole and entire Muscle, but because the Head (and no more) of the Muscle is yet whole; the which while it is moved, it doth together with it draw the Tendon that is inseparable from it, and the ray likewise thereof, although it be now wholly dead, and without any true and proper motion.

And these signs (that appear in a perfect corruption and Sphacelus) are still the same in every one of them; whatsoever the cause be that it draweth its original from; whether it be from cold, or from a poysonous quality, or from transpiration

hindered, or from an extraneous heat, or lastly, from the defect of Aliment; unless it be in this only that such like Symptoms in a Sphacelus that hath its original from an occult cause and such as is poysonous (as for example, the *Delirium* or dotage, the *Syncope*, and the like) are greater and more grievous. But in a Gangrene and mortification that is but yet now beginning, there is observed a diversity of the signs and symptoms, according as the Gangrene hath its original from divers and different causes. For in a Gangrene that ariseth from cold there suddenly appeareth an acute and pricking pain, and a redness in the part, which soon after is changed into a black color; and the heat that was in the part is extinguished; and there is perceived a coldness and stupidity (with a certain kind of horror) as it useth to be in Quartan Agues. And moreover, in a Gangrene that proceedeth from a poysonous and malignant humor in the body, which Nature thrusteth forth unto the external parts, there is present a continual Fever, and a strong conflict of Nature with the Disease; from whence the *Syncope*, Dotage, and the like, have their original; and such a Gangrene as this ariseth for the most part in the external Members, and the extrem parts thereof, (as for instance, the great Toe of the Foot) with a certain Pustule or Bladder, (under which there is present a black spot) which oftentimes is suddenly derived into the whole Leg and Thigh.

But that Gangrene that followeth upon great and extraordinary Inflammations (that proceed most usually from the hinderance of Transpiration) is known by this, That the flesh and flourishing color that is wont to appear in Inflammations is turned into that which is pale and wan; that beating pain which before did infect now ceaseth, the sense is become dull, and there ariseth very great Pustules that are full of a thin ichorous excrement, like unto that that cometh from the washing of raw flesh. Which appear almost the same, when the Gangrene hath its original from an extraneous heat. If lastly, the Gangrene arise upon the part by reason of the want of Aliment, or through a dry distemper, then there is present neither pain nor inflammation, nor swelling, but rather a leanness, and the body is immediately cooled; and this Gangrene happeneth for the most part in those places of the body that are the utmost and extrem, as for instance, the Ankles and Toes. But when as length the Pustules arise, and the part becometh pale and wan, then the pain likewise appear, and the Fever is excited. But if the Gangrene happen by reason of hard tying and Ligatures, then the part swelleth and is distended, and there arise greater Pustules, full of a thin excrement, resembling the washing of raw flesh: but the evident Causes we may easily learn and understand from the sick person himself.



**Prognosticks.**

1. That the Gangrene is a Malady very dangerous is sufficiently manifest unto every one. For unless it be speedily cured, it degenerateth in a very short time into a Sphacelus, and the part becometh altogether dead. For this cause therefore there is not any the least delay to be made; but help is to be afforded with all possible speed: which may be done with less difficulty in a body that is as yet young, strong and vigorous, where the vital spirits are as yet entire, and especially where the Muscles and Nerves are as yet unhurt.

2. But that Gangrene which is with an afflux of poysonous humors, and an occult quality, is more difficult to be cured than that which is without any such afflux: for there are but very few that recover of such Gangrenes.

3. There are Gangrenes that are yet more dangerous, and these are they that begin in the moist parts: for the innate heat is sooner suffocated in such parts by the great store of humors abounding therein.

4. And for this cause it is that the Gangrene that ariseth in Hydropical persons is likewise very seldom cured, but most usually it degenerateth into a Sphacelus; and that which ariseth from the Antecedent Cause is likewise ever more dangerous than that which hath its original from the primitive Cause; in regard that in the former the Bowels are more affected.

5. But a Sphacelus is yet far the more dangerous Malady. For the part that is taken with the Sphacelus can no way be restored and made sound again; but it is forthwith to be cut off, and separated from the part that hath life: which if it be not speedily done, then the sound parts that lie near will likewise be infected, and the putridness will at length creep into the rest of the body, from whence there will be extream danger of present death; before which there usually precede Dotings, Watchings, the Syncope, Convulsions, Ructures and Belchings, Sobblings, and a cold Sweat breaking forth over all the Body: and some of them die while they are yet speaking, and others of them die being as it were oppressed with sleep.

**The Cure.**

The Cure of the Gangrene that it may be rightly proceeded in, first of all regard is to be had unto the Dyer (and the Antecedent Cause, if it be present in the body) before ever we come to Topicks. Most Physicians prescribe and command a Diet that is cool and drying: which albeit that it be most true of that Gangrene that is accompanied with an afflux of Humors, and followeth great Inflammations: yet nevertheless the Diet is sometimes also to be varied according to the variety of the Causes; as anon in the species or several

kinds of Cure we shall further shew you.

And so also the Evacuation of the blood, and the preparation and purgation of the vicious humors ought to be enjoyed, according to the Nature of the peccant humors. This in the general is to be pre-cautioned, that regard be had unto the Heart, that it be well and safe guarded against all the malignant vapors that exhale from the putrifying part. And therefore we must here administer for the comforting and strengthening of the Heart, Medicaments of Borrage, Bugloss, Carduus Benedictus, the smallest Sorrel, Bole-armenick, Terra sigillata, Bezoar stone, Citrons, Treacle, Michridate, Species of Diamargarit. frigid. Electuarius de Gemmis, Confection of Hyacinth, Alkermes, and the like. Or,

Take the Water of Scabious, Sorrel, Borrage, Roses, and Carduus Benedictus, of each one ounce and half; Syrup of Sorrel, Citrons, and Pomegranates, of each one ounce; the species of Diamargarit. frigid. Bole-armenick, and Terra sigillata, of each one scruple; Mingle them, and make a Potion. Or,

Take Conserve of Roses two ounces; of Sorrel, of Borrage, and of Gilliflower, of each one ounce; Citron rind candied, Rob de Ribes, of each half an ounce; prepared Margarites, Bole-armenick, Terra sigillata, the temperate Cordial Species, of each one scruple; Syrup of Sorrel, and of Citrons, as much as will suffice, and mingle them.

Let the Heart be likewise guarded externally with Topicks: As,

Take the Water of Roses two ounces; of Borrage and Sorrel one ounce and half; of Carduus Benedictus one ounce; Vinegar of Water-Germander six drams; Spirit of Roses one scruple; Mace, Lign-aloes, Rinds of the Citron, of each half a dram; Saffron half a scruple, Camphire six grains: Mingle them, and make an Epithem, which must be applied unto the Region of the Heart, for its defence and preservation.

In a Gangrene likewise for the most part the sound part ought to be fenced and guarded; and we must be alwaies doing our endeavor, that the said part receive none of the putridness. And for this end the above mentioned Defensives of Bole-armenick, and Terra sigillata must be administered; unto which (by reason of the malignity) Water Germander may be added, and mingled therewith. As,

Take Bole-armenick one ounce; Terra sigillata half an ounce, Harts-horn burnt and prepared one dram, Camphire half a dram, Wax six drams; Oyl of Roses four ounces, Rose Vinegar one ounce, the juice of Water Germander half an ounce, the white of one Egg: mingle them and make an Unguent. As,

Take Bole-armenick, and Terra sigillata (or sealed Earth of Lemnos) of each half an ounce: Mingle them with Vinegar of Water Germander.

*Gulielmus Fabricius* frequently made use of this that followeth.

Take *Barley meal* four ounces; *Bolearmenick* two drams, *Galls*, *Cypress Nutts*, *Pomegranate rinds*, of each one dram and half; with a sufficient quantity of *Oxymel simplex* make a *Cataplasma*.

*A Gangrene from over-much cooling.*

But now that we may come unto the more special Cure, we will in the first place declare unto you, in what manner the Gangrene that hath its originall from an overgreat cooling ought to be Cured. But now that it may be well known, how and in what manner all those are to be dealt withal that have been over cooled (whether it be so that the Gangrene be already present and in being, or that it be only neer at hand) we will from the very beginning briefly pursue and declare the truth of the thing.

*The Cure of such as are over-cooled.*

If therefore there be any one over cooled, yet notwithstanding that as yet there is no Gangrene present; neither is the part as yet become wan, pale, and cold, but that there is rather a redness in the part, together with a vehement and burning pain; then in this case the man is not instantly to be moved neer unto the Fire, but he is rather to be placed somewhat more remote from it, that so by degrees the heat may recover and recollect itself. But if it be so that the part be not altogether stiff and stifled with cold, so that there be no longer any blood left therein, then it is forthwith to be well chafed, and rubbed with Snow; or the overcooled members are likewise to be thoroughly washed with cold water, upon which they will begin by little and little to wax warm, and to recover their former heat. Which the Inhabitants of the Northern Climates have much in use; who are wont when any Travellers are overcold, stiff, and almost dead therewith, first of all to plunge them deep into cold water; and before ever they give them any entertainment, to wash and rub their Hands, Feet, Noses, and other Members, with Snow. And that from the inward parts the heat may the more strongly diffuse it self unto the external parts, and that all the cold may be expelled, it will be requisite to administer suppers made of Wine, and to drink Wine and Treacle mingled together. The aforesaid People of the Septentrional Regions use to give their Guests (when they are almost dead with cold) *Hydromel*, with the Powder of *Cinnamon*, *Cloves*, and *Ginger*, and the like Spices; after which they put them to bed, and cause them there to Sweat. For which purpose there be some that outwardly apply likewise unto the body Flagon or Stone Pots full of hot water. Afterward when the pain and the coldness are something mitigated, gentle rubbings with the hands anointed with the Oyl of *Camomile*, *Sweet Almonds*, and *Dill*, are to be administered; and the

parts are to be fomented with sweet Milk, in the which there may also be boyled the Leaves and Berries of the *Lawrel*, *Rosemary*, *Camomile*, *Sage*, *Organy*, *French Lavender*, and the like. The Decoction of Rape roots is likewise singularly useful; and commonly unto those members that are pained with overcoldness they use to apply the Decoction of Rape roots that have been first frozen with cold.

After this we must berake our selves unto those things that are hotter, such as the Oyl of *Lilies*, of *Turpentine*, of *Wax*, *Nettle seed*, *Cresset*. But if there be not only a fear of a Gangrene, but that there also be one already present, and that the Member already begin to die, we must then use our utmost endeavor that the heat may be preserved in the part, and that from other parts it may be again called back unto it: and therefore here is little or no benefit to be expected from *Defensives*, but *Scarifications* are rather to be administered, and the parts to be fomented with those hot Medicaments that were but even now mentioned; unto which we may add *Scabious water*, *Germander*, the Root of *Asclepius* or *Swallow-wort*, and the like. Unto the parts there may be administered, *Treacle*, *Mithridate*, *Trochisques of the Viper*, the *Ley* in which *Water Germander* hath been boyled, and *Treacle Waters*.

Secondly, If the Gangrene hath its originall from the afflux of Malignant humors, or a malignant quality; then by appointing a Cooling and drying Diet, and by administering of Meats sauced and seasoned with Citrons, Lemmons, and Pomegranates; and likewise by evacuating and emptying forth of the peccant and depraved humors, either by opening a Vein, or by purging Medicaments (if need require, and that the nature of the Disease, and the strength of the Patient will bear it; but we are here alwaies to take heed how we give those things that are too strong) the Malignity is to be expelled, and the depraved matter to be driven forth from the more inward unto the external parts; and such a like Cure almost is here to be instituted, as is wont to be in malignant Fevers; to wit, there are Medicaments to be administered of Citrons, Sorrel, Roses, Borrage, *Water Germander*, *Carduus benedict.* *Dittany of Crete*, *Swallow-wort*, *Angelica*, *Treacle* likewise and *Mithridate*. And we must do our endeavor that a Sweat may be provoked by these medicaments, and that the Poyson may be driven forth from the Noble members unto the exterior parts. Which that it may the more successfully and more easily be done, the malignant matter is likewise by Topicks to be drawn forth unto the external parts.

Where we are also to take notice, that if poyson stick outwardly unto the body (as it happeneth oftentimes from the strokes of poysonful Creatures) then *Defensives* are to be administered, lest that

*A Gangrene from the afflux of Malignant humors.*

that the Poyson creep broader, and spread it self unto the more interior and Noble parts. But if the malignant matter be bred in the body, then Defensives are by no means to be administred; but the said Matter is only to be called forth unto the external parts; unto which end Scarifications may be administred unto the part affected, Cupping-glasses likewise and Leeches may be applied; and moreover the part also may be washed with the Decoction of those Medicaments that resist malignity and putridness; such as are Wormwood, Rue, Dictany, *Asclepias* or Swallow-wort, Angelica, and especially Water Germander, which is of a most sovereign virtue in all Gangrenes, and that that hath in it an extraordinary power to preserve from putridness. And others there are that to attract do make use of the Radish root, the Seed of Cresses, and the like.

But if Poyson shal chance unto the body from without, and shal either by a blow, biting, or any other touch be transfused into the part affected; then those Medicaments that do strongly attract the Poyson, dry it up, and consume it, are to be made use of: for which end and purpose, an actual Caustery may most fitly be administred. The part affected being either scarified, or burnt, then there are further to be applied those Medicaments that resist putridness, and prevent the *Necrosis* or Mortification, and such as do also attract and draw the offensive and depraved matter; as an Emplaster of the aforementioned Medicaments; with which we may likewise mingle Leven, and Garlick roasted in the Embers. And at length, the Gangrene being in a fair way of recovery, if there hath happened any Ulcer from the scarification or burning, it is then to be cleansed by Medicaments of the Juyce of Smallage, and Honey of Roses (unto which if need be, there may be added some Spirit of Wine) and other things are moreover to be done that are fit and convenient for the Ulcer.

*A Gangrene from Inflammation* Thirdly, The Gangrene that is wont to follow upon great Inflammations, and to arise from the abundance of blood and humors that suffocate the Natural heat of the part, is cured in this manner. First of all, the Diet that is appointed ought to be slender, and such as is cooling. The blood and humors that flow overmuch into the part are to be emptied forth of the whole body, by opening of a Vein, Scarifications, Cupping-glasses, Purgers, and other convenient Remedies; and lest that they should any longer flow into the affected part, they are to be drawn back, and derived into some other place; and round about the part affected there is some kind of Defensive to be applied, as we told you above, in the first Part, Chap. 5. touching an Inflammation.

And then immediately the blood and humors that are corrupted in the part, and suffocate the

Native heat, are to be evacuated out of the part affected, that so the cause may be taken away, and the former heat and vigour may be restored unto the Member.

Wherefore the part must presently (since that there is danger in delay; and the blood that hath already begun to be corrupted, by reason of its abundance and thickness can hardly be digested or dissipated by Medicaments) be scarified with many sections, and these ought to be made deep enough; and of the corrupted blood a sufficient quantity (to wit, great store and plenty thereof) is to be evacuated. And yet nevertheless, in the greatness and depth of the Incisions, we ought to have respect unto the greatness of the Affect itself; and according as the Affect is more or less nigh unto putridness, and a *Sphacelus*, so thereafter the Incisions are to be moderated. Some likewise there are that apply Leeches, or the lesser sort of Cupping-glasses, if the blood be not sufficiently and plentifully evacuated by scarifications alone. The Incision being made, the part is to be washed with salt water, or a Ley; unto which we may likewise add Lupines, or Aloes, and boyl them together; that so if any of the thicker blood continue yet sticking in the part; it may be washed off; and that the Reliques or Remains of the putrid matter may be evacuated; and all possible resistance made against the putridness. And for this end, this Decoction following may be made use of; with the which the affected Member (as often as any new Medicaments are applied) is to be washed: *Viz.*

Take of the strongest Ley, and of the best Vinegar, of each one quart; of Water Germander, Lupines, Wormwood bruised, of each half a handful; of Flowerdeluce root, round Aristolochy, and Swallow-wort, of each half an ounce: let them all be boyled to the consumption of the third part; unto the streining add of Aloes and Myrrh pulverized, half an ounce; and then let them boyl once or twice again: at length add Honey of Roses one ounce, Spirit of the best Wine three ounces; Mingle them, &c.

When the part is washed, then the *Ægyptiack* Unguent is to be laid on; which here is reputed the most excellent of all the rest, as being a most efficacious Remedy for the taking away of putridness, and for the separating of the dead flesh from the sound. But if the Corruption be more then ordinary, then *Gulielmus Fabricius* compoundeth such a like Remedy as this following, which likewise resisteth malignity.

Take Rust of Brass three ounces, of the best Honey, and with the Decoction of Wormwood, and Water Germander scummed, one pint, Vinegar of Squils, six ounces, Alum, and Salt Armoniack, of each half an ounce; the Juyce of Rue, and Water Germander, of each two ounces; boyl them to a good thickness: and afterwards add of the best Treacle and Mithridate, of



of each half an ounce; Camphire one dram, and mingle them.

This Water is likewise very useful, if a wollen Cloth be wet therein, and so imposed upon the place affected; it hath likewise been happily and successfully administred in the Gangrene of the Cods; of which we have spoken above.

Take Vitriol one ounce, the tops of the Oake one handful, Frankincense half an ounce, Camphire two drams, Urine two pints and half; boyl them to the Consumption of a third part, and then strain them.

But the Ægyptiack Unguent is not alone to be applied, but upon the Unguent that Cataplasm is also to be imposed, which resolvetb, drieth, and hindreth putrefaction; such an one as *Johannes de Vigo* in his second Book, first Tract, and seventh Chapter describeth and commendeth; and which many other Physicians and Chirurgeons now a daies likewise make use of. And all these are to be applied blood-warm; and they are so long to be continued, untill the putridness be removed.

But if the Malady wil not yield unto these Remedies, then we are to have recourse unto those that are stronger, to wit, Causticks, such as those Trochisques of *Andro*, *Polydas*, *Musa*, and *Pasio*, which dissolved in Vinegar and Wine may be imposed upon the part. Many indeed do here commend, and prefer Arsenick before all other Remedies; but *Gulielmus Fabricius* doth (and not without good Cause) reject and altogether disallow of it in the Cure of a Gangrene, as that that not only hath in it a Seprick and putrefying faculty, and a quality of melting the flesh, as it were; but that likewise produceth very great and grievous Symptoms, vehement pain, Dotings, Syncope's, and the like, the malignant vapours being communicated unto the principal part. It is therefore more safe to make use of an actuall Caustery, as that which hindereth and preventeth putridness, drieth and corroborateth the part.

This is also much commended.

Take Mercury; dissolve it in *Aqua fortis*; when it is dissolved, precipitate it the Oyl of Tartar; after it is precipitated, wash it. Or Mercury alone dissolved and mingled with the Water of the Trinity Flowers; and wollen Cloaths wet in this Liquor may be imposed on the part.

The Crust in what manner soever it be produced is to be taken away by those Medicaments that have been above declared, in the first Part, and Chap. 13. touching a Carbuncle. Neither are we to wait so long til Nature shal altogether have separated the Corrupt from the Sound, but the highest part of the Crust is with the edge of a Knife or a Penknife to be cut even unto the sound part, that so there may be a way made for the Medicaments unto the deeper parts, and the rest that are corrupted. For if we expect until the Crust shal

be freed of its own accord, it may possibly hrppen, that under the Crust a new putridness may be contracted. The rest of the Cure is in the same order to be proceeded in, as is fit to be done in Ulcers.

Fourthly, If the Gangrene happen from overmuch heat, then (a Cold Diet being prescribed, and the hot humors being duly qualified and evacuated) if the Malady take its original from an internal Cause, the Member affected is to be scarified, and then washed with such a Decoction as this.

*A Gangrene from too much heat.*

Take the Water of Endive, Sorrel, Lettice, Nightshade, and Vinegar, of each one pint; Syrup of Sorrel, two pound, of Lupines half an ounce, Water Germander half a handful, Salt three ounces: boyl them till a third part be consumed.

After this the Ægyptiack Unguent, and the Cataplasm but even now mentioned, is to be imposed; and the rest which were before prescribed are speedily to follow. Where notwithstanding this is to be observed, that (unless in case of urgent necessity) we must not have recourse unto the actual Caustery, lest that hereby (to wit, by the power and force of the fire) the extraneous heat, which is the Cause of the Gangrene, be augmented.

Fifthly and lastly, If the Gangrene arise from the defect of Aliment, and Blood, and Spirits, and chiefly in truth if it be by reason of a Driness, and an Atrophy (necessary Nutriment being denied unto the part) then meats that are hot and moist, easie of Digestion, and such as generate much and good blood, are to be given unto the sick Person; and outwardly the body is likewise to be moistened with Oyntments of sweet Oyl, or with Oyl of sweet Almonds; and all things are carefully to be avoided that exsiccate and dry the body. And unto the part itself that is already affected with the Gangrene the Aliment is by all manner of means to be attracted. And therefore here there is no place left for Defensives; in regard that they shut and stop up all passage of the blood and Spirits unto the part affected. And therefore we are not only to annoynt the part affected and the other members with the Juyce of Earth-worms, which is made of the said Earth-worms first washed in Water, and then in Wine, & so put into a great Vessel with good store of the Oyl of sweet Almonds & Violets, and melted by a gentle and moderate heat over hot Embers, and afterwards strained (which is a special and sovereign Remedy in the Atrophy, and extenuation of the parts) but the part affected is therewith likewise gently to be rubbed and chafed; unto which also Cupping-glasses not scarified are to be applied. But it wil be most fit and requisite, if there be already present a putridness, to administer;

*A Gangrene by reason of an Atrophy in the part.*

administer those things that do alike both attract and resist putridness; such as are, Salt Water boyled with Water-Germander, Liquid Pitch, with the meal of Lupines, of the bitter Vetch Orobis; Myrrh, and the like. But if the Gangrene hath already made any progress, the part is then to be scarified, and the Egyptiack Unguent, and that likewise that is compounded of Pitch, and those other things a little before mentioned, are to be laid thereon.

*A Gangrene from the interception of the blood & spirits.*

Moreover, If the Gangrene happen from the interception of the Blood, and the Spirits likewise, (whatsoever the Cause then be that thus intercepteth the blood and the Spirits) it is immediately to be taken away; as, if the said interception be from the binding of the part, it is forthwith to be loosened; and withal those Medicaments that resist putridness, as likewise those that discuss that that is corrupted (such as are those that are made of the Meal of Beans, of the bitter Vetch Orobis, of Lupines, Aloes, Water-Germander, and the like) are to be imposed. And if the Gangrene hath already gotten unto any height, the place is to be scarified; and those other things that are required in a Gangrene, are to be done. If an astringent and repelling Medicament be the Cause, the said Medicament being removed, the heat is to be recalled by Frictions, Lotions, and Anointings. And so we must also proceed in the Gangrene that hath its original from other Causes that intercept the Spirits. For the Cure of the Gangrene it self doth scarcely at all differ; the difference lying only in the removal of the Causes. But if the Malady be come to that, that the Member is now already altogether mortified and dead, and that it be sphacelated, from whatsoever cause it be that the Malady hath its original, there is then one only way of curing it. For seeing that what is altogether dead in the body cannot possibly recover life again, and that it hath now altogether the nature of a thing that is preternatural, there is this one only Indication, to wit, that it is to be taken and amputated from the body. Which if (by reason of the unsuitness of the place) it cannot conveniently be done; then the case is wholly desperate. For some parts are much more fitly situated for amputation than others; as for instance, the fingers, the feet; the hands, the genitals may be cut off with less danger. But if the Malady be in the Thorax or Chest, or in the Belly, the parts cannot then be cut out, and especially if there be many particles of the Member at once infected. For it sometimes so falleth out, that the whol Member is not to be taken away, but only some parts thereof. But oftentimes indeed the whol Member is wholly to be amputated and cut off, to wit, when the putridness hath seized upon and corrupted all the parts thereof round about: which in some may be speedily done, and

without any great danger, as in the *Scrotum* or Cods; but in other parts the amputation is full of difficulty and peril; as in the Feet, Arms, and Hands. But after what manner the said amputation and the taking away of that which is corrupted is to be performed, we will now acquaint you. Now this may be done divers waies; some there be that having first applied a Defensive upon the sound part, they then with many straight and oblique Sections scarifie the dead flesh that lieth near unto the sound; and this they do very deep, even unto the very bone. And afterward upon the Wounds they strew the powder of Arsenick and Sublimate, that so the mortified part may be separated from the sound. But in this way of excirpating the corrupt flesh, Arsenick (as we lately gave you notice) is suspected; and therefore in the stead thereof we are to administer other burning Medicaments, of the ashes of Vine-sprigs and unflaked Lime. The Crust that is al over the part affected is to be taken away with a Pen-knife; neither must we expect it to be separated of its own accord. Yet nevertheless, that the dead part may be dried, and be easily separated from the sound, *Fallopins* applieth this Spadraspe:

Take *Aloes*, *Myrrh*, *Acacia*, *Gallia Moschata*, *Alipta Moschata*, al the *Saunders*, *Lign Aloes*, *Cumin*, *Allum*, of each one dram; make a Powder: Of which,

Take one ounce; *Ship-pitch*, *Resin of the Pine-tree*, *Colophony*, of each two ounces; *Frankincense*, *Mastic*, *Syrax liquid*, of each one ounce and half; *Gum Arabick*, and *Tragacanth*, of each half an ounce: Let them be all melted; put a Linen cloth into the Liquor until it be thoroughly soaked in the Medicament. And afterwards let all other things be done, as it useth to be in other Ulcers. There are others that with an actual Cautery burn that that is corrupted, even until there be a pain perceived in the part; and all other things are afterward to be done according to art.

But now *Fallopins* doth advise us (if much dead flesh be to be taken away) not to make use of an actual Cautery alone, in regard that from the said burning there will be caused a most abominable loathsome stench. Others there are that by Section and the Razor amputate that that is corrupted; and afterwards to avoid the Hemorrhage, and to dry up and consume the reliques, they apply likewise an actual Cautery, if need require. But what hath hitherto been spoken touching this way and method of Curing, is to be understood only of that Sphacelus wherein the whol Member is not corrupted, and when there is no cause of taking away the Bone likewise.

*The cutting  
off the cor-  
rupted  
Member,  
when to be  
done.*

For if the whol Member be corrupted, and therefore to be amputated; this cannot be effected either with an actual Cautey, or a Potential; neither yet with a Razor; but there is a necessity of cutting off the wholentire Member, the Foot, the Hand, &c. But in what manner this amputation ought to be performed, Authors differ much in their opinions concerning it. *Celsus* in his seventh Book, and Chap. 33. perswadeth us to make the Section between the sound flesh and the dead; and rather to take away some of the sound, than to leave any of the dead flesh remaining, lest the Malady that is left corrupt that that is sound. Which way of curing most of our late Physicians disapprove of, by reason of those dangers that follow the Section in the sound part, to wit, an immoderate profusion of the blood, and an extraordinary great pain, and the faintings and swoondings that depend upon these. And therefore that these may be avoided, they advise us to make the Section in the corrupted part alone. *Fallopins* indeed with a Razor cutteth into the dead flesh (even unto the bone) a fingers breadth distant from the sound part; and then after this he forthwith taketh away the bone with the saw; and then again with Irons red hot he burneth the greater Vessels, and the flesh, even unto the causing of pain. *Hieronymus Fabricius* also leaveth a portion of the sound flesh (as much as one fingers breadth) and appointeth the Section likewise to be made with a Razor in the dead flesh; and he afterwards burneth the part with fire-hot Irons (after the same manner) to hinder and restrain the Hemorrhage, and to waste and consume the reliques of the putrefaction.

But here in this place we are to advertise you, that sometimes the putridness will yet creep further, and infect the neer neighboring parts; but then again, that sometimes the putridness ceaseth, neither doth it creep any further unto the parts neer adjoining; which whensoever it happeneth, then round about the corrupted part there appeareth a Circle that is exactly red, and of an exquisite sense. In the latter case indeed, that way of curing seemeth not altogether improper and unfit, in a part that is corrupted and dead. For by this means those many dangers which accompany that Section that is made in that part that is alive, are prevented; to wit, the profusion of blood, pain, and faintings; since that through the corrupted part the blood cannot pass; and because that the said part hath no sense at all. But if there be any of the dead flesh left remaining, this, when the putridness shall cease any longer to creep (although there shall not be any Cauteries administered) will afterwards divide it self of its own accord; and then it will be separated by Nature, upon the administering of fit and proper Medicaments. But if as yet the putridness be creeping forward, and that Nature hath not as yet of her own accord

begun to separate the sound from the corrupt, then the Section cannot be instituted in the corrupted part alone, without present danger. For it oftentimes falleth out, that in the interior parts, and in the bottom of a Member, the corruption peneareth far deeper and further than in the skin it appeareth to do. For the Muscles and their Vessels in the interior parts (in regard that they are there hotter than they are without) do easily receive the putridness. Wherefore if any will yet be instituting the incision in the mortified part, seeing that he leaveth behind much putridness in the interior parts, either he will hasten sudden death upon the sick person (by leaving the said putridness that will be alwaies creeping further, deeper, and broader) or else by reiterating and renewing of the Section he must needlessly and unadvisedly again excruciate and torture the Patient. Neither maketh it any thing at all to the matter that the pain is excited in the sound part. For as *Celsus* saith in the place before alleaged, it is little or nothing material, whether that guard and defence be sufficiently strong and safe, that is but one alone. And as *Hippocrates* hath it, *Unto extream Diseases the Remedies that are to be administered must likewise be extream.* But in very truth, the pain may in a manner be moderated, and the sense obscured by the fastening on of the Ligatures, intercepting the passage of the Animal Spirits for a certain time, as we shall afterward shew you; and likewise how with a very sharp Razor the Section shall be almost quite finished, before ever the sick Person shall perceive what it is in doing. But yet they themselves who make the Section in the the Corrupted part cannot (notwithstanding) hereby prevent all manner of pain. For so soon as the bone is cut asunder with the Saw, then there happen very sharp and most acute pains, because of the *Periostium*, or that Membrane that encompasseth the bones; which pain if any would avoid, then of necessity he must make the Incision with the Saw in that part wherein the said Membrane it self is dead: which if he should do, without all doubt even there likewise the bone it self is corrupted, and there would be so great a putridness left remaining in the Vessels, and in the Muscles (which are very apt & ready to receive the said putridness) that it cannot possibly be afterwards all of it extinguished, no not with the Cautey it self. Neither do those Cauteries themselves take away all that is corrupt without much pain; of which there ought indeed many to be applied and administered, if all the dead flesh that there remaineth be to be taken away. And moreover, Cauteries have likewise in them these inconveniences, that by their vehement heat they melt the fat and the humors; and they so vehemently heat the parts, that thereupon in those parts that have their sense and feeling there is an extraordinary pain excited; and the flesh for the most part is so

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consumed by the force of the Fire, and withall contracted, and wrinkled, that a great part of the bone sticks forth naked and bare, which very often requireth a new Section. The Hemorrhage likewise is not so greatly to be feared. For if the Vessels be intercepted by Ligatures (as we shall shew you) there will not then flow forth much of the blood. And if the blood should chance to flow forth in somewhat a greater abundance then ordinary, yet this would make rather for the benefit of the sick Person, then be any waies prejudicial and hurtful unto him. For by this means the blood in the Vessels that haply hath received some putridness, is evacuated; and so by this means all the danger is taken away and prevented, lest that the putridness should creep any broader, and by spreading it self any further should again prevail and get strength.

That we may therefore briefly declare unto you after what manner the said Section ought to be performed, Universals (if the malady will admit of any respite and delay) are not to be neglected; and especially there is a due regard to be had to the strength of the Patient. Let the sick Person therefore first of all eat a porcht Egg with a piece of Bread toasted, and thoroughly soaked in Wine; and let him be strengthened with Perfumes, Epithems, and other Cordial medicaments. Some there are that before they set upon the Section do prescribe some kind of Narcotick Medicament, to dull and stupefie the Sense: but *Fallopins* much blameth these; for (as he saith) gentle and sleight stupefiers benefit little or nothing; and as for those that are strong, they are very dangerous. After this, the sick Person being fitly placed, and held fast by the standers by, or (if need be) fastned by tying, and the Muscles being drawn upwards towards the sound part, upon that part in which the section ought to be made the Member is most strictly and very hard to be tied down with Ligatures. By which binding, first of all the overgreat flux of blood is prevented; secondly, the sense of the part (by the shutting up of the Animal Spirits) is somewhat dulled; and thirdly, the Muscles that are by this means drawn upwards (the Section being ended, and the bands loosened) do again devolve and move downward, that they may cover the extreame and naked parts of the bones.

**The place of Amputation** As concerning the place of Amputation; in the Fingers, and Toes, the Section is most fitly made in the very Joynt. For in the Joynt (if at least the Malady will admit thereof) the Amputation is made with the least danger, and likewise with the least pain. For the Nerves and the Tendons so soon as they are cut assunder they are instantly contracted upwards, and covered with flesh, neither doth there follow any Convulsion hereupon. But if in the Feet the Sphacelus transcend the Ankle, then the Leg is to be cut off a

little below the Knee; so that the Patient may be the better fitted and accommodated with a wooden Leg. For which cause (in the Leg) the amputation is not alwaies to be made in that part that is neereft unto the dead part, but there is oftentimes also much of the sound part to be amputated. For if much of the Leg be left, this will be very burdensome unto the sick Person, and a great impediment to him in his motion. But then on the Contrary, in the Arm, as little as may be of the sound part is to be amputated; but the Section ought to be instituted as neer as may be unto the corrupted part.

And therefore when we have made choyce of the most convenient place, then with a very sharp Razor the Section is to be made even unto the very Bone; and if it may be done, the very *Periostium* is likewise to be cut in sunder; and if there be any smal portion of the flesh left behind, or if there be any of the flesh hid betwixt two Bones (lest it should afterwards hinder that Section that is made with the Saw) that flesh is likewise to be cut off with a Knife that is fit for the purpose. And then instantly, and with as much speed as possibly may be, the Bone is to be amputated with the Saw, unless the Section be in the Joynt; for the nthe Member may be amputated with the Razor alone. The amputation of the Member being finished, the next thing to be done is the stopping of the flux of blood, after that it hath flown forth sufficiently. Most Practitioners burn the Vessels with a Cautery. But *Paræus* much disliketh this course; for he conceiveth it indeed to be very cruel and barbarous, in regard that it causeth an extraordinary great pain, if the Section be made (as it ought to be) in the quick and live flesh; and very bad and dangerous Symptoms happen unto the Nervous parts: unto which we may add that by the said burning very much of the sound flesh is consumed, whereupon the bones are left bare, and the flesh, together with the Cicatrice, either it is not at all brought over the naked part; or if it be, it is not without much difficulty. And therefore he Practiseth another way of stanching the Hemorrhage; to wit, with a Crows-bill he layeth hold upon the Vessels, and draweth them altogether, & then binderh them as close as may be. The Vessels being thus straitly tied together with a Ligature; or (if you judg this more) fit shut up close with a Cautery; the bonds are then to be loosened, and the courser part of Flax or Hemp (we call it Hurds) after it hath been thoroughly soaked in the White of an Egg, and sufficiently besprinkled with a Poulder that hath in it a virtue and faculty of stanching the blood, is to be laid upon the Member. And yet nevertheless for the most part, without any such Ligature or Cautery, the blood may likewise be stopped and stanchd after this manner; As,

Take the finest Flour three ounces, Dragons blood, Frankincense, Aloes, of each two drams;  
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*Bolearmenick, Terra Sigillata, Parget or Plaster, of each one dram; Water Frogs prepared (though there be some that for this use and purpose do rather commend those of them that live among Trees) one ounce; the Flix of a Hare cut very small, a thin Spunge torrefied by the Fire, of each two drams, and make a Pouder.*

Upon the Vessels likewise that pour forth blood there may very fitly be applied and laid on that Mushtrom so much used by Chirurgeons to stanch blood, which they call *Crepitus Lupi*. Others there are that make up Emplasters of Dragons blood, Bolearmenick, Terra Sigillata, and the finest Volatile flour (and the like) with Pitch. Afterwards the Trunk of the amputated Member is to be safe guarded with those Defensives, or such like, as we have above mentioned; the like unto which is this also that followeth; which is to be applied with Hurds, and Swath-bands, having been first wel and thoroughly soaked in Oxycerate.

*Take Bolearmenick, Terra Sigillata, Dragons blood, Mastick, Parget, Oyl of Roses, and Oyl of Myrtle, of each one ounce; Whites of three Eggs, Vinegar as much as wil suffice, and make an Unguent.*

And this is the first dressing, or the first binding up; which is not to be loosened (in the Summer time) before the second or third day; but in the Winter, not before the fourth day at the soonest, unless in case of urgent necessity.

And in the mean time the Member is to be placed in a direct middle posture or figure, in Pillows stuffed with the hairs of Harts, or Wheaten meal. The first binding being loosened, and the first Provision taken away, again with the White of an Egg, as before, the Pouder stanching the blood is to be applied; and the extremities of the bones to be covered with a piece of the dry Liniement; and in the end the Wound to be bound up with some kind of Digestive.

And this Cure is to long to be continued, until there be now no cause of further fear that any mischief may follow upon the Hemorrhage, and that the Wound be now become Purulent. For then these Medicaments being laid aside, we are to make use of Cleaners. *Gulielmus Fabricius* commendeth this Unguent following of the Juice of Smallage, not only for the Gangrene, but likewise for other sordid, foul, and Malignant Ulcers:

*Take the Juice of Smallage, of Water-Gemander, of Waybred or Plantane, and of Rue, of each two ounces; Honey of Roses strained one pound; boyl them to the Consistence of a Syrup: and afterwards mingle therewith the meal of Lupines, the Pouder of round Aristolochy root, of Angelica root, of Swallow-wort, and of Treacle, of each half an ounce, Aqua vita one ounce; make an Unguent.*

In the mean time we must do our endeavor that the Lips of the Wound may be drawn together, and afterwards that flesh may cover the bones, and may be unto them in stead of the Pillows. *Paracelsus* and others sew together the lips of the wound in the form of the letter X: but a Suture (which they call the dry Suture) seemeth to be far more convenient; or else by a Glew, which is done after this manner. A Linen Cloth of a convenient figure and bigness, moistened throughly in a Glew of Astringent, Emplastick, and viscus Medicaments (such as are Bolearmenick, Dragons blood, Gum Tragacanth, Sarcocol, Mastick, the White of an Egg, and the like) is to be laid upon the place. As,

*Take Mastick, Dragons blood, Bolearmenick, Sarcocol, and the finest Volatile flour, of each half an ounce; Rosin of the Pine Tree two drams; mingle them with the White of an Egg. Of this Linen Cloth let there be made Emplasters which are to be applied unto the extremity of the Wound on both sides.*

So soon as the Emplasters are become dry, so that they begin to stick too fast unto the Skin, then we use to annex unto them little handles to hold by, of Thread twice or thrice doubled; and with them we contract the lips; and this may likewise be done in a suture that is more thin sewed.

And then at length we must do to the utmost of our endeavor, that the extremities of the bones which were hurt by the touch of the Iron and the Air may fall off. For which end, some there be that burn the utmost parts of them with a red hot Iron; yet still taking great heed lest that the flesh, and other of the sensible parts be hurt thereby. Others make use of the Emplaster of Betony, and other Catagmatick or Fracture Medicaments. And so within thirty or forty daies whatsoever there is of the bone corrupted wil fall off. If the flesh be luxuriant or proud (as we sometimes term it) it is then to be repressed and kept under by the Pouder of Alum, and the like, and at length the Cicatrice is to be brought over it. But whereas pains do in the mean time much infest and disquiet the sick Person, and that there is cause to fear lest that Convulsions arise thereupon; the Trunk or Stump of the part that hath been cut asunder, yea and the Neck likewise, and all the Spinal Marrow is to be anoynted with those Medicaments (that are otherwise also wont to be applied unto affects of a Nervous Nature) made of Sage, Rosemary, Marjoram, Rue, Lavender, Dil, Camomile, St. Johns wort, Bayberries, the Oyl of Earth-worms, the Oyl of a Fox, Turpentine, and the like.

We must not here pass by in silence the Scorbutick Gangrene, touching which we have already spoken something in the third Book of our Practise, Part 5. Sect. 2. Chap. 4. Which most usually

*The Scorbutick Gangrene.*

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usually beginneth about the extreame part of the Foot, with black and purple spots; and a little after this there appeareth from hence a crusty and Gangrenous Ulcer, dry, and yielding forth neither the thin Excrement *Sanies*, nor yet the thicker, which we term *Pus*; and then one or other of the Toes beginneth to die, and then there appear red lines, and purple spots upon the juncture of the Foot, according to the length of the Leg. I have my self seen some examples of this Disease. But both this Gangrene and Sphacelus differ from that Gangrene and Sphacelus that are both of them well and commonly known, and that in many things. For that Gangrene that is so well and commonly known hath its original for the most part from Causes that are manifest and apparent; and there alwaies floweth forth of the Member that is dead in such a like Sphacelus a stinking and waterish humor; the Member becometh soft and putrid, and it sendeth forth from it a grievous and noysom stench, like unto that of a dead Carcass; and it creepeth much in a very short time, and most commonly it soon destroyes and kills the man that hath it. But now the Scorbutick Gangrene almost ever appeareth and invadeth the person without any manifest cause, creepeth forward but very gently and slowly, and doth not destroy the person therewith affected until after a long time: for I knew a Noble-man that lived above three months, but a certain School-Master I saw that lived above six months notwithstanding this Malady. The part affected with this Gangrene is altogether dry, so that there floweth out of it nothing at all; and when the corrupt part is taken away by the Iron, although a red flesh offer it self unto the view, yet nevertheless that same red color is withal somewhat dark and blackish; and the day following it likewise is even found to be dead also; and there is here no stink at all perceived that offendeth. And moreover, so soon as ever the Malady hath first of all seized upon one of the feet only, then presently after (without any manifest cause at all) there begin to appear in the other Leg and Foot also certain spots and blemishes of a red or purple color; and then likewise not long after this, one or other of the Toes of that Foot becometh wan and leaden colored, and in a very short time it is found to be quite dead: and at length most commonly the party (as it befel that Noble person before mentioned) being taken either with the Apoplexy, or with the Epilepsie, upon the first approach thereof dieth.

And yet notwithstanding, this Malady sometimes invadeth suddenly; to wit, when the peccant humors are by wrath, terror, or the like Cause, first disturbed, and then afterwards thrust down suddenly (and as it were in a moment) unto the Toes; and first of all to some one of them only; after the very same manner as the *Erysipelas* or *Rosa* is wont suddenly to arise: and this humor (in regard that it hath in it a very bad and destruc-

tive quality, or else hath received it from some affect of the mind) causeth that part that it seizeth upon instantly to die: and hence it is that by some this kind of Gangrene and Sphacelus is in special called *Syderatio*; whereas otherwise the Gangrene is wont in the general also to be termed *Syderatio*. Now this said humor seizeth upon the Tendons most usually; from whence there arise most terrible and intollerable pains that torment and grieve the sick person both day and night; which said Tendons, in regard that they do not so easily and soon putrefie as doth the flesh; hence it is that this Gangrene likewise creepeth on so slowly, that sometimes (unto the external view) it is a whole months space in overspreading one only joynt, and ere it seize upon another, albeit that within almost all the Tendons of the Foot are already infected: and this Malady continueth sometimes a quarter of a year before it kill the person, and it is seldom or never cured, in regard that this depraved humor hath insinuated it self more deep than usually into the Tendons, and therefore cannot be so easily taken away. So a certain Noble person (that had otherwise a Cacochymical and foul body, and was subject unto the *Erysipelas*) upon a fear and terror (Nature then suddenly thrusting down the vicious humors unto the little Toe) was surpris'd with a Gangrene, which afterwards by little and little overspread likewise all the rest of the Toes, and almost the whole Foot, with extreame great pain; upon which (after the space of three months) he died.

Of this kind was that Gangrene also, with which a certain Citizen here (about thirty years of age) was taken in the month of *January*, 1633. He first of all complained of a pain in his left Arm, neer unto the Elbow; which he making light of, the pain descended unto his Hand; and it was presently taken with a cold Tumor or Swelling, and at length became suddenly overspread with a purple color; so that now there appeared manifest signs and tokens of mortification, and a Gangrene. Yet notwithstanding, upon the administering of fit and proper Medicaments (of which we shall speak more hereafter) his Hand had its natural color again restored unto it, and the swelling vanished away; so that there was nothing further to be seen, but only in the very tip of the little Finger the Scarf-skin appeared to be somewhat wrinkled; upon the opening of which there flowed forth a little of an humor; and the Skin underneath appeared pale, and so the very tip of the finger was taken with a Gangrene; which yet nevertheless (without any diminution of the Joynt) was cured. In the curing whereof we found this one thing well worth our observation, that from the said finger most sharp and exquisite pains were extended into the whole Hand, insomuch that the sick person was even afraid to betake himself unto his bed; but that rest and



sleep he took was in the night time as he saith. When his finger likewise was handled by the Chirurgeons, the pains that he felt were so great, that he could not endure the least touch; the feet moreover swelled much, and his face was something more swollen than usually.

Neither indeed wil any man that is not a stranger unto what is done in the practice of Physick admire that some vitious and depraved humor by Nature her self thrust unto some Member should be able suddenly to mortifie and deaden it. Certain it is that a potential Cauteiry of Lye (out of which Sope is made) doth within the space of an hour, or at the utmost in two hours time, mortifie that part upon which it is imposed; whenas notwithstanding it is made only out of the Salt of Woods, and of unslaked Lime. What wonder is it therefore, that some humor of the same Nature, salt, sharp, and malignant, being now separated, & acting a part by it self from the rest, by the which it was tempered and qualified (as Hippocrates tells us in his Book of the Ancient Physick) should effect somewhat like unto the former.

Of all those that have been affected with the Scorbutick Gangrene (of whom I made mention before) no one ever recovered, besides that Citizen, that was taken with a Gangrene in the little Finger of his left Hand; he himself being (as I saw good cause to judge of him) a Scorbutick person. Now the Medicaments by which he was cured are these that follow.

Take of the Apoplethick Water, and the Spirit of Juniper berries, of each two ounces; the Spirit of Wormwood, and of Cherries, of each half an ounce; Sage water, and Lavender water, of each one ounce; Mingle them.

This Water was oftentimes prepared; with the which the affected part was washed, or else Linen Cloaths moistened therein were laid upon the part.

Take Conserve Cochlear. two ounces and half; of Betony and Sage, of each one ounce and half; of the temperate Cordial Species, and pleres archont. of each one scruple; Rob. of Juniper two drams, Syrup of Betony one ounce, Make an Electuary.

Take Conser. Cochlear. three ounces, of Sage two ounces, Species Dyaxylaloos one dram, the Candid Rinds of Citron half an ounce, Rob. Juniper, two drams; with the Syrup of Betony make an Electuary.

Take Oyl of Juniper berries one ounce, Oyl of Earthworms two ounces, Oyl of Flowerdeluce, one ounce; Mingle them.

Take the Essence of Carduus Benedictus, and of Wormwood, of each two drams; Cochlear. half an ounce, the Elixir of propriety one dram, the Spirit of Water Cresses one scruple; mingle them.

Take of Fennel root, and Asparagus root, of

each half an ounce; Pimpernel two drams, the Herb Harts Tongue one handful; Germander, and Groundpine or Herb Ivy, and Dodder, of each half a handful; Anise and Fennel seeds, of each two drams; Juniper berries two drams and half, the Flowers of Bugloss and Liverwort, of each one pugil; Raisins cut small one ounce: boyl them in Spring Water unto seven or eight ounces: unto the straining ad of Sugar two ounces and half: And then again let it boyl once or twice, unto the Consistence of a liquid Syrup; and then add of Cinnamon water half an ounce, and mingle them.

Take Asparagus Roots, and Fennel Roots, of each half an ounce; Pimpernel, and Succory of each two drams and half; the Herb Maidenbair, Agrimony, Harts Tongue, Germander, of each half a handful; Anise seed, Columbines, of each two drams; Borrage, and Bugloss flowers, of each half a pugil; boyl them in a sufficient quantity of Water, unto half a pint: unto the straining add of the whitest Sugar two ounces; and again let them boyl up once or twice, and make hereof a liquid Syrup; unto which ad of Cinnamon water half an ounce, and mingle them.

Take the Trochisques of Capars, and of Rheubarb, of each one scruple and half; Extract of Wormwood, and Gentian, of each one scruple; Oyl of Cinnamon two drops; make Pills.

Take Trochisques of Rheubarb Capars, Lactica, of each two scruples; Extract of Wormwood, and Gentian, of each one scruple; of Spleenwort as much as wil suffice; and make Pills hereof.

Take Pills of Tartar with Scammony, and of Rheubarb, of each one scruple; Extract of the Pills Aggregative half a scruple, Oyl of Clover one drop; with Betony water make Pills.

Take the Elixir of propriety, with the Juyc, one dram; Essent Cochlear. two drams, of Germander, Spleenwort, and Wormwood, of each one dram, and mingle, &c.

Take Laurel leaves, Betony, Sage, and Marjoram, of each two handfals, to wash the Hand withall.

Take Trochisques of Rheubarb, and Capars, of each one scruple, Extract of Succory half a dram, Centaury the less, and Caranus Benedictus, of each half a scruple; Make Pills forty five.

Take Leaves of Betony, Bay leaves, Marjoram, Sage, Rosemary, of each two handfals; Flowers of Elder and Lavender, of each one handful; Stachados of Acacia half an ounce; boyl them in Wine to foment the Hand therewith.

Take of the Nerve Emplaster three ounces, distilled Oyl of Sage one scruple, of Marjoram half a scruple; Mingle them, and make an Emplaster.

Take the Elixir of propriety two scruples, Es-

sent. Cochlear. and of Germander, of each two drams, of Elecampane, and Lign Aloes, of each half a scruple, Mingle them &c.

Take the Leaves of Lavorel, and Betony, of each two handfuls; Marjoram, Sage, Organy, of each one handful; Flowers of the Arabian Stechados half an ounce: boyl them in Wine for a fomentation of the Hand.

Take the opening Roots half an ounce, Agrimony half a handful, Leaves of the choycest Sene one ounce, Mechocan half an ounce, Ginger one dram and half; boyl them in Spring water: in four ounces of the straining dissolve half an ounce of Manna, and then strain it again, adding thereto one ounce of Sugar, and make a Syrup.

This Cataplasm was likewise made use of.

Take Bean meal one ounce, Powder of Water-Germander, Rue, Sage, Wormwood, of each half an ounce, and make a Cataplasm.

The little Finger with that next unto it (the Ring-finger) was oftentimes anoynted with the Oyl of Earthworms, which is made by putting the said Earthworms washed into a Glass, & then enclosing the Glass in a Mass of Dough, bake it in an Oven; and the Liquor that cometh from these baked Worms gather it together, and filtrate it.

But for the Curing of the Ulcer in the little Finger, after the Gangrene we used this Unguent.

Take Oyl of Bays, Honey, Turpentine, of each two drams; May Butter, Gum Elemi, one dram: Mingle &c.

### Another Cure.

A certain Noble Person having had his Foot wrung with his shoe, in that very place where the hurt had bin there arose a black Pustule in the sole of the right Foot. Which he not much regarding, there instantly followed a Gangrene, which in that place seized upon the Flesh. Which so soon as it was observed, the affected flesh was presently scarified, and the Pustule being cut with a pair of Cizors, the Ægyptiack Unguent was imposed upon the part affected. After this the Defensive of Vigo was applied unto the Foot; which is in this manner prepared.

Take Oyl of Roses Omphacine, and Myrtles, of each three ounces; the Juice of Plantane and Nightshade, of each two ounces; boyl them to

the Consumption of the Juices, and then strain them.

Add of white Wax one ounce and half, Meal of Lentiles, Bean meal, and Barley meal of each half an ounce; of all the Saunders, of each two drams and half; Bolearmenick one ounce, the Berries and Leaves of Myrtle, of each one dram; Mingle them, and make an Unguent, with the which let the part affected be anoynted.

Upon this Unguent there were imposed Linen Cloaths wel wet in the Water following; and they were often renewed.

Take Barbers Ley two Quarts, of Lupines grossly beaten three handfuls; boyl them, until the Lupines become soft: let the Ley be strained; and in the straining dissolve of Saffron two scruples; Mingle them.

The Scarification of the place affected, and the laying on of the Ægyptiack Unguent (together with the Defensive) was thrice repeated the first day: the Water that was likewise applied.

The day following the corrupt flesh was cut forth, and the same helps and Remedies administered.

The third day the corrupted flesh being wholly removed, the following Digestive was imposed.

Take of pure Honey two ounces, of Bean meal two drams, of Choice Myrrh half an ounce, the Whites of two Eggs, Saffron six grains; Mingle them, and make an Unguent.

And together with the foregoing Unguent there was likewise administered the Emplaster of Vigo, such a one as this:

Take Bean meal, the Meal of the bitter Vetch Orobis, of Lentiles, of Lupines, of each four ounces; Juice of Wormwood, six drams, common Salt half an ounce, Oxymel simplex as much as wil suffice; boyl them over a gentle Fire, and make an Emplaster. The use of these Medicaments being for some daies continued, the sick person was thereby perfectly cured.

Hitherto touching Ulcers in general; and particularly concerning the Gangrene and Sphacelus, both that Species of them which we term Scorbutick, as also those other that are so wel and commonly known. It remaineth that in the next place we speak something of what is oftentimes amiss in the Skin, Hair, and Nails.



# THE FIFTH BOOK.

## THE THIRD PART.

### *Of the Vices of the Skin, Hair, and Nails.*

#### SECT. I. *Of the Vices of the Skin.*

##### Chap. 1. *Of the color of the Skin changed, (in general) and in spe- cial touching that blackness that is contracted from the Sun.*

**N**ATURE being very solicitous and careful in the preservation of the health of Mans Body doth alwaies that which is for the best; and therefore she expelleth the vitious humors that are heaped up in the body from the principal Members, and the greater Vessels unto the more external parts, and the superficies of the body; from whence there arise many kinds of Tumors, Tubercles, and Pustules, as likewise divers sorts of Ulcers; as also divers kinds of spots and blemishes, and changes of the color. Whereas therefore we have already treated (in the first and second Part) of Tumors, Tubercles, Pustules, and Ulcers, (and withal made mention there of the Measles, small Pox, and certain other spots and blemishes) as there it is to be seen; we will now handle those things that remain in this Part; and withal we will treat of the Vices, that is to say, whatsoever is amiss in the Hairs and Nails.

*The changes  
of the color  
of the Skin.*

And in the first place indeed for what concerneth the Vices and blemishes of the Skin, the changes of its color are many and various. First they are Universal, and of the whol body; as in the Cachexy, Scurvy, yellow Jaundice, the white Fever of Virgins (commonly called the Green-sickness) touching which we have elsewhere spoken. Secondly, they are particular, and of some one part of the body; as in a Suggillation, Ery-

spelas, Gutta Rosacea, Impetigo, Lichen, Vitiliginer; touching al which we have already spoken in our handling of Tumors; as also the blackness contracted from the burning of the Sun, those spots and blemishes appearing in the faces of Women great with child; as those they call Epbelides and Lentiginer, which are spots and blemishes of a dark and reddish color, that in their color and figure do very much resemble Lentiles. And moreover likewise those spots and blemishes which are contracted from the very birth and infancy; touching which we are now to speak. And first of al, among these blemishes we will speak something of that affect which they call Epbelius, that is to say, heat-wheals, or small hard pushes in the face. Where notwithstanding we must give you to understand (as a little before we told you likewise) that many of the Tubercles, Spots, and Blemishes of this kind, although they are now with us commonly and generally well known; yet nevertheless by what names these like Affects were called by the Ancients is not so well and sufficiently known. And this appeareth even out of Celsus, who in his sixth Book, and Chap. 5. thus writeth: *The regarding of these Vari or Pimples, Lenticulæ or Freckles, and Epbelides, so as to cure them, is but a meer folly and foppery (saith he) but yet nevertheless it is likewise a thing altogether impossible to take from Women the care they have of the beauty and handsomness of their faces.* Now then, of those that we mentioned before, the Vari and Lenticulæ are commonly known; although that species be somewhat more rare which the Greeks call Phacor, since that kind is a Lenticula somewhat more red, and more unequal. But as for the Epbelis, the most are generally ignorant, as not well knowing what it is; it being indeed nothing else but a certain roughness, and an hardness of an ill color. The rest of them are to be found nowhere in the body, but only in the face; but the Lenticulæ are wont likewise to arise and appear in some other part. And I am altogether of opinion, that even out very ordinary Women are sufficiently acquainted with these Affects; which said Affects notwithstanding, viz. Vari, Lenticulæ, and Epbelides, what Affects they were with the Ancients is not sufficiently manifest. If the Epbelis that Galen mentioneth in his seventh Book of the faculty of simple Medicaments be written by the Greek Letter  $\pi$ , then without all doubt it hath its name from the Sun, so that they are certain spots contracted from the Sun. But Celsus (unless it be an error and mistake of the book) writeth the word with the Greeks, Epbelis, and saith that it is a roughness and hardness of an evil color; which wel agreeth not with those spots. Eustachius Rudius (in his second Tract, second Book, and Chap. 4. of the Affects of the external parts) saith that the Greeks Epbelis is Panus; and that Panus indeed may infect any part whatsoever.



foever of the body, especially the Groyns, the Abdomen, the Back, the Neck, and the middle Region of the Breast: but for the most part nevertheless (as he writeth) it defileth the very Forehead it self. But in regard that *Celsus* reckons up the *Ephelis* among those Affects that never appear but in the Face, we have therefore determined above (in the first Part, and 29. Chapter) that those broad spots that appear about the Groyns, Breast, Abdomen, Back, and Neck, and dye the said parts with a certain kind of duskiness, that is one while somewhat greenish, and another while something reddish, and as soon again of a color inclining to black (and which are generally well known) are more fitly to be referred unto the *Alphus Niger* or the black *Alphus*. And he (the aforesaid *Rudius*) doth likewise ill in calling the *Ephelis* by the name of *Panus*; and his determining that *Ephelis* and *Panus* are one and the same Affect, is altogether false: since that out of *Celsus* his fifth Book, Chap. 18. *Pliny* his twenty fourth Book, Chap. 4. & 9. and likewise from other Physicians it is very cleer, that *Panus* is the Greeks *Phygethon*; and that sometimes likewise *Phymata* are comprehended under the name of *Panus*. But there are some others also, that neglecting the Authority of the Ancients, call those spots in the Face, especially in Women, by the name of *Pani*. *Hippocrates* in his Book of Women that bear nor Children, page 245. (in *Foesius* his Book) writeth that this kind of spots is called *Ephelis*; when he saith, That those women that are with child if they have a spot in their Face, as it were from the Suns burning, for the most part bear female Children. Where for the most part is well added, in regard that it is often observed also that Women great with Child, which have born Males, have had their Faces defiled with these kind of spots; so that these spots may rather be said to be a sign and token of the Conception in general, than particularly of the Sex that is conceived, whether it be Male or Female: Whence it is, that the Germans likewise call it *Kinds flecken*.

But now, whereas there is a twofold *Ephelis*, one from causes external, another from internal Causes; of the latter of these we intend to treat in the Chapter following, but of the former we will speak in this present Chapter. And indeed the first kind of these *Ephelides* is that well known

Blackness  
from the  
Sun.

Affect, to wit, that blackness (which the Germans call *Sommerbradt*) in the Face, the Hands, and those other parts that are exposed unto the Sun-

beams, the Skin that before was white now beginneth to wax red with a certain kind of blackness.

The Affect is of it self known from the Cause foregoing. And the Face is not only deformed with some certain spots, but the whol color thereof is changed.

But now this burning and blackness from the Sun may be prevented, if the Suns Beams be turned away from

Preservation  
from it.

the Face by Shades and other Coverings, and the Hands kept covered with Gloves; or both the Face and Hands anointed with the white of an Egg, shaken together with Rose-water, or with the Mucilage of the Seeds of Quinces, or of Fleawort extracted with Rose-water, or Gum Tragacanth dissolved in Rose-water; or else let the face be anointed with the Emulsion of the four greater cold seeds, or let it be anointed with this Unguent.

Take Unguent Pomatum two drams; Ceruss dissolved in Rose-water one dram; Mastick half a dram; the Mucilage of the seeds of Fleawort one ounce: Make hereof a Liniment.

And of these kind of Medicaments there is need most especially in the Spring time, when the tender Face can very hardly be sufficiently guarded from the heat of the Sun, and of the Air.

#### The Cure.

But if the Face be already as it were burnt, and a blackness be contracted, Nature indeed of her own accord is wont in process of time to change this deformity (when it draweth a new Scarf-skin upon the burnt place) if in the mean time the Face be covered from the Beams of the Sun. But these delays being for the most part tedious unto women, they must in al haste have their pristine color again restored unto them by the help of Medicaments. And commonly women are wont to cleanse their Faces with the Leaves of the Cherry Tree while they are yet fresh and green: Others of them there are that use Rose-water wherein Camphyre hath been dissolved; and others of them make use likewise of the Cherry-tree Gum dissolved in Vinegar, wheteunto they put a little Oat-meal.

And here likewise there is much use made of the Water of Bean flowers, of Mallows, and white Lilies: and those that are made of the four greater cold seeds destilled with Milk. Bitter Almonds are also here very useful. Or,

Take the juyce of Plantane, and of Nightshade, of each one ounce: Litharge of Gold, and of Silver, of each one dram: burnt Lead half an ounce: Tutty prepared six drams: Camphyre half a dram: Oyl of Roses and Wax as much as will suffice, and make an Unguent.

Take Roots of white Lilies roasted under the Embers two drams: the Root of the Herb Dragon-wort, and Solomons Seal, and Melons seed, of each two drams: the Mucilage of Fleawort seed one ounce: of the Citrine Unguent half an ounce, and make an Unguent according to art.

CHAP;

## Chap. 2. Of the Ephelides in Women with Child.

**T**Here is another kind of these *Ephelides* that happeneth more especially unto Women with Child; and it hath its original from the Menstruous blood retained; which (in regard that for the most part from the said retention it contracteth a great deal of viciousness) is wont to excite in Women great with Child divers symptoms, as likewise these spots in the Face bred from a vicious humor thrust forth thither.

But now and then notwithstanding Virgins and Women that are not with Child have these kind of spots breaking forth in their Faces, if in the time of their monthly Menstruous flux they eat those kind of meats that (as they say) have in them a power of coloring; such as are the Carrot Roots, and the red Beets, and the like, which (as we are taught by Experience) do breed and bring forth these kind of Spots.

### Signs Diagnostick.

These *Ephelides* in Women with Child are known, in that they are dark and dusky spots, appearing more especially in the Forehead, and deforming it, and spreading themselves both in length and breadth; and oftentimes they equal in length the palm of the hand, but they are void of all kind of roughness.

### The Prognostick.

The *Ephelides* in Women are a sign of their Conception, (as we told you before out of *Hippocrates* his Tract of Women that never have Children) and they are seldom or never cured; and if haply they be taken away yet they soon return again, and with some they continue even unto the time of their Delivery, and after that they vanish, and in some they likewise continue after their Delivery; and in some others they also vanish before they are delivered (when the Child is now become strong and vigorous) like as do other symptoms that usually infect Women with Child in the beginning of their Conception.

### The Cure.

Indeed it is very requisite that the depraved humors (that are the Antecedent Cause of this Affect, and are wont to nourish the same) should be evacuated; but in regard that in Women with Child we may not safely make use of those evacuations, we ought therefore to content our selves with Topical Medicaments. And here there is to be commended the use of Bayberries, if their rinds be taken off, and then they be beaten into a powder, and so mingled with Honey, and made into the form of an Unguent, and the Face therewith anointed in a Bath. Or,

Take Powder of Laurel Berries as much as you please, and with Musbrom Water make it into the form of a Pultiss, with which let the Face be anointed in the Bath. Or,

Take Camphyre one dram; Nitre two drams; Mingle them with Honey, and let the Face be anointed with the said mixture.

The Emulsion likewise that is made of the Seeds of Hemp is very useful.

For the spots that are in the Faces of Maidens while their Courses are upon them, and whilst they yet flow,

Take the Juice that is pressed forth of the root of Bugloss sliced, and with it anoint the Spots.

## Chap. 3. Of Lentigines, Pimples, or Specks in the Face.

**A**nd hither belong likewise the *Lentigines*, which the Germans (from the color of dry Leaves) call *Sommer sprossen*, *Sommer flecken*, and *Lauf flecken*; and they are spots in color resembling Lentiles, with the which (in Women especially) the Face principally, and sometimes likewise the Hands, Arms, and upper part of the Thorax being exposed unto the Air is aspersed and overspread, they sometimes standing thicker, and sometimes thinner, like unto so many drops, as it were, without any pain and trouble; in some appearing indeed only in the Summer time, and vanishing again in the Winter; and in some likewise they keep their course from year to year.

### The Causes.

But now they have their original from adult burnt blood seizing upon the Scarf-skin. And this happeneth more especially in ruddy bodies, that are of a Choleric temperature, and especially in the Summer time when that vapor of the blood is more burnt. And hence it is that in the Winter for the most part these spots vanish, but then they return again and appear in the Summer. And they break forth chiefly in those parts that are exposed unto the external Ambient Air, the Face, the Neck, the Hands, and the superior part of the Thorax, because that the Scarf-skin is more burnt by the Sun, and the Ambient Air detaineth those burnt vapors in the Skin. *Platerus* is of opinion, that the Juice that should nourish the hairs that are fixed in the Skin, being brought unto the pores of the Skin do cause these spots. For this humor (saith he) being first of all assimilated by them, and agreeing somewhat with them in color before they are put unto the Roots of them, if it be by them further dispersed any whither else into the superficies and circumference of the pores, it then produceth thote kind of spots, and that dark and dusky color, somewhat (more or less) inclining unto that color of the hairs that it had gotten

gotten while it was assimilated by them. Which diffusion of this Juyce into the Pores proceedeth sometimes from the external heat overstrongly attracting it, and withall dilating the Pores, if then the Juyce nourishing the Hairs doth not only affix it self unto the roots of the Hairs, but diffusing it self further also, and there subsisting, causeth those Dusk, Dark, and Brown spots, more or less, according to the diversity of the colour of the Skin. But since that the Face wanteth Hairs, it is not credible that the Juyce ordained by Nature for the nourishing of the Hair should breed such kind of spots: but for the breeding of these like spots there sufficeth a portion of the adust blood, degenerating as it were into a Melancholly humor. *Platerus* also is of opinion that the overgreat Natural looseness of the Pores contributeth its furtherance, so that even by reason of them the said Juyce doth not only nourish the Hairs, but likewise produce these spots. But I had here rather assent with *Eustachius Rudius*, who thinketh rather that the *Lentigines* do arise from the thicknes of the Skin, and therefore because that the Cheeks are more thin than other parts, therefore it is that although there come into them very many of these adust vapors, yet notwithstanding they are not detained in them, but are from thence gently evaporated; and so the *Lentigines* that are in them are but few: but because the Skin of the Fore-head is thicker, and that the vapors are not easily received in it, but being once received are the more detained there, therefore the Fore-head doth the more abound with these *Lentigines* or Dusky spots.

### Signs Diagnostick.

These *Lentigines* are easily known; because that they are Spots of the bigness of a Lentile, of a dark, brown, and dusky color, dispersed up and down in many drops as it were, standing close and thick together, and very familiar unto such as are of a red Hair; and they annoy the Face, the Neck, the Hands, and those parts that are exposed unto the Sun and the Air.

### The Prognostick.

Those *Lentigines* as they have in them no danger at all, so for the most part they vanish in the Winter: but yet notwithstanding in some bodies they alwaies return again in the Summer; and in some they are Annual, and return constantly from year to year.

### The Cure.

*Galen* for these Spots commendeth the Herb *Costmary* with Honey and Water, as also the seed of the Cabbage. Bitter Almonds are likewise very useful, and so is the Oyl of Eggs likewise. But most effectual is the Water of great Figwort, distilled out of that well known Plant: as also the Water drawn out of the flowers of the spotted

Satyrian; and lastly the Oyl of Tartar by draining. O,

Take of *Eldern flowers*, and *Bean flowers*, of each a like proportion: pour in unto them *Goats Milk* blood-warm. Let them stand for a daies time in some cold place; and afterwards let them be distilled: and then, Take *Bean meal* as much as you think fit; let it be moistened with the said water, and in the evening let the Face be anointed with that mixture.

In the morning let the Face be washed with the water of *Elder flowers*, and *Bean flowers*; unto which there may be added a little *Camphyr* dissolved in the Spirit of Wine. Or,

Take *Honey* four ounces, *Oyl of sweet Almonds* one ounce, *Powder of the Flower deluce* root two drams, *Borax* half an ounce; make an Unguent.

The *Virgins Milk* likewise (as it is called) is here very good; and it is thus prepared.

Take of *Lisbarge* four ounces; boyl it in three pints of the best *Vinegar*, unto the wasting of a third part; when it is cooled, let it be strained through a filtering bag; and afterwards,

Take *Sal Gem* three drams; boyl it in cleer water unto the Consumption of a third part; then strain it: after this,

Take of this Water two parts, and of the former *Vinegar* one part; and mingle them. Or,

Take the *Citron Unguent* new made three ounces, of *sweet Almonds* thoroughly bruised, and *Bean meal*, of each one dram; the bone of the *Sepia fish*, *Harts horn*, and *Barley meal*, of each two drams; let them be incorporated with *Honey* and then wel mingled together. Or,

Take the fresh flowers of *Beans* as many as you think fit; pour unto them a sufficient quantity of *Goats Milk*: let them stand infusing a day and a night. Afterwards let them be strained; and squeezed hard; and into the straining let new flowers be thrown in, and so let them stand infusing again for the space of a day and a night, and then let them be strained: this must be five times repeated. And then add of the soft pulp of new Bread as much as will suffice, that it may be made like unto a Pultise; and then adding thereto a little *Goats Milk*, distil them: With this Water let the Face be washed in the morning and evening.

There are certain things likewise very usefull, that shall be propounded in the following Chapter.

### Chap. 4. of Cosmetical, or Beautifying Medicaments.

BUT yet although we have hitherto in the precedent Chapters spoken touching the taking away of divers of these Skin-spots; Women notwithstanding (that study little else but their beauty) are not herewith contented; but they



restlessly pursue after those things that procure unto their Faces a lustre and amiableness. For their sakes therefore we will add something also even of these Cosmerick or beautifying Medicaments. Now these Medicaments are of two sorts; some of them do only mend the obsolete, dark, and blackish colour of the Face, and render the Skin somewhat more bright and cleer; (and these are by no means to be disallowed of; since that they only restore unto Man or Woman that beauty which either by the injury of the Air, or by any other Cause, they have lost and been deprived of; and which do truly and really produce a fair and stable colour; and these are called Cosmerick or beautifying Medicaments:), but others there are that are only Palliative, and these we call Face-fucusses, because that unto the Natural colour there is likewise added an adventitious and acquired white or red colour; and this is so painted on that continueth it for a while, and but for a while only, and deceiveth the Eyes of the Beholders. We shall speak of the former sort of Medicaments alone. But as for the latter sort of these Medicaments, in regard that we judge it neither honest nor pious to make use of them, we will therefore say nothing at all of them, but pass them over in silence. But now as for what concerneth the former of these Medicaments, it seemeth altogether a thing unreasonable to reject them, in regard that they bring over the Face no *Fucus*, or counterfeited painted beauty, but they only restore the Natural whiteness of the body, lost upon any Cause whatsoever. And this is more especially allowed unto Women; who because that they are in Wisdom, strength of Body, Fortitude, and in some certain other things, much inferior unto Men, therefore in stead (of these as the Poet *Anacreon* tells us)

*Nature on Women doth bestow*

*A Comely form, and Beautious biew:  
Instead of Lances, Targets, Shields,  
Their Face a fair bright lustre yields:  
Which puts on Women such a Grace,  
That Fire and Sward to them give place.*

And *Plato* (in his *Phædrus*) saith, That of all things whatsoever Beauty is the most excellent and Amiable, and there he calleth a Beautifull Face, a Divine Face, that is to say, a Face shining forth by reason of a kind form that is put upon it. But the other is altogether to be rejected by Women; and *St. Cyprian* writeth very truly, in these words of his (in his second Tract, of the Habit of *Virgins*). We ought not only (saith he) to admonish *Virgins*, or *Widows*; but I conceive, that even Married Women and all others whatsoever (in general) are to be admonished, that the Handiwork and Image of God ought by no means to be adulterated, by adding thereto any yellow color, or any black Pow-

der, or any kind of redness, or (in a word) any other Medicine that corrupteth the Native Lineaments. And a little after; They lay wicked bands (saith he) upon the Work of God, when as they go about to transfigure and reform that which he himself hath formed, as not knowing that all whatsoever is made and wrought is the work of God, but whatsoever is Changed is the work of the Devil.

Now the Medicaments of the former sort are such as (almost all of them) do very much scour and cleanse, by separating from the Skin that Juice that deformeth the same with this brown and dusky color, and by alluring thereto a new Juice that may procure unto it a bright and beautiful color. Unto which there are sometimes added likewise certain Emollients, which have in them a power to soften the Skin when it is hard, thick, and rough; they also make it smoother, and more especially they cause an extraordinary softness in the Hands.

Milk will satisfy both these scopes, and especially Asses Milk, and Goats Milk: Which *Poppæ* the Wife of the Emperor *Nero* being not ignorant of (a Woman extremely proud and luxurious) she caused five hundred Milch Asses always to attend her whithersoever she went; and in a great Tub made purposely for her to bathe in, she washed her whole body in the said Milk, that so it might be all over freed from wrinkles, made tender and delicate, and preserved white; as *Pliny* relateth the story in his eleventh Book, Chap. 41. and Book 28. Chap. 12.

Cleaners are these; the Roots of the greater Dragon-wort, Solomons Seal, great Figwort, wild Cucumber, white Lilies, the Elder, bitter Almonds, Pines, the four greater cold Seeds, French or Kidney Beans, Rice, Bean meal, the Meal of Cicers, of Lupines, Starch, the White of an Egg, Milk, Camphyre, Salt, Oyl of Tartar, Frankincense, Myrrh, the Crumbs of white Bread, the Oily Nut Ben.

Of the Roots of Dragon-wort there is a certain Gerfa made; which is nothing else but the Dregs or Lees thereof, as they commonly call them.

And so also there may in the like manner be prepared such a like Facula or Gerfa, out of the Roots of Solomons Seal, and great Figwort. And out of the Oily Nut Ben (commonly called *Balanus Myrepica*) there is an Oyl pressed forth, that is called the Oyl of Ben.

And likewise out of divers of these simples together that erewhile we mentioned there are made many distilled Waters, and divers Compositions. As,

Take Root of Solomons Seal, Dragon-wort, great Figwort, of each one ounce and half; of the Flowerdeluce one ounce, of Bean flower two ounces, Mastick one ounce, Borax two drams; let them be distilled.

Take the soft Crumb of White Bread three pound

pound thereof, the Whites of Eggs wel shaken together, twelve in number; Goats Milk two quarts; let them be distilled. Or,

Take Rice one pound, let it be steeped in the Water of Bean flowers, untill it break; afterwards add of choyce Mastick six drams, Borax two drams; and then destil them. Or,

Take the Pith or Crumb of White Bread one pound, Root of Solomons Seal half a pound, Goats Milk as much as wil suffice; and let them be distilled. Or,

Take Flowers of the Elder, and of Bean flowers, of each a like proportion; pour bereunto Goats Milk, and strain it; let them stand in a cold place for eight daies; and then destill them. When you use the Water,

Take of Beans bulled, beat them into a very fine Powder, and cast the same into the said Water, and after this let the Face be washed with this Water, and permitted to dry leisurely of it self. In the end dissolve Camphyre in the Spirit of Wine, and mingle it with Eldern Water; and let the Face be washed with this Water. Or,

Take Whites of Eggs, in number twenty four; Cinamom two drams, Asses Milk or Goats milk, two Quarts, and destil them.

Emulsions likewise made of the four greater Cold Seeds, bitter Almonds, and Pines, are here very useful.

There are also Decoctions made (with which the Face is to be washed) of Beans, Cicers, Lupines, Rice. Or,

Take Roots of white Lilies, Solomons Seal, Borrage, of each one ounce, Mallows, Sope-wort, Parietary or Pellitory of the Wall, and Violets, of each two pugils; Beans bulled one handfull, Flowers of Mallows half a handfull; make a Decoction, with which let the Face be washed.

Liniments moreover and Unguents are made use of, among which are the Pomacea or Pomata, as they are commonly called. The Oyl of Talck is now adaiies much in the mouths of many; and very much used in the Nurseries of great Women. But this last seemeth rather to belong unto the Face-fuccuses then unto the true Cosmeticks, unless it be administred only to cleanse; and after the use thereof (when they go abroad in publick) washed off from the Face.

But now the more Choice and delicate Women (that are unaccustomed to labor) do not only administer certain Medicaments unto their Faces, but unto their Hands likewise, that so they may become soft and white; and these Medicaments are made of the Crumb of White Bread, the Meal of Barley, of Cicers, of Lupines, and Honey, all which being wel wrought together with Water, or else mingled with soft Sope and Honey, they wash their Hands therewith. Or,

Take Meal of Cicers, of Beans, of sweet Almonds, of each two ounces; the Roots of Flowerdeluce of Florence two drams, Honey and Rosewater of each as much as wil suffice; and Mingle them.

And here likewise the Pomatum Unguent is of much use,

Or else such a Sope may be made;

Take of Venice Sope one pound; let it be dissolved in Rose-water; add thereunto the Powder of Flowerdeluce of Florence one ounce, the Meal of Cicers one ounce and half; and mingle them.

There are likewise many other Medicaments (which we mentioned a little above) for the making of the Face fair and clear; and they are here also very useful.

Many other things there are of this Nature, that we may see in Rondeletius, in his Tract of Fucusses.

### Of Mending and Beautifying foul and deformed Cicatrices.

The rectifying and amending of deformed Cicatrices is not unficly referred unto the Cosmetick or Beautifying Medicaments. For when as upon the Solution of continuity (either by reason of a Wound or an Ulcer) there is from the Juyce nourishing the Skin (for the uniting of the part) something generated that is like unto the Skin, and stiled by the name of a Cicatrice; this said Cicatrice is indeed like unto the whole skin; and yet it is oftentimes differenced from it in colour, and many times likewise in figure; because that sometimes it becometh more high and raised, and otherwhiles it is depressed & kept low, and leaveth as it were a pit, and so consequently a certain inequality or unevenness, and thereby breedeth a deformity; which in the progress of time is wont to be somewhat changed, whilst that the Cicatrice is rendered day by day more like stil unto the Skin. Which if yet nevertheless we have a desire that it may be speedily effected, it may then be done by some certain Medicaments; such as are, first the Oyl of Myrrh, which is made if the Yelk be taken out of an Egg hard boyled, and then the Egg filled up with Myrrh, and put into a moist place, until it be all dissolved into a Liqueur; and this likewise may be wrought by the distilled Oyl of Myrrh. The moisture also that sweareth forth of Eggs whilst they are in roasting is very useful for this purpose. The Oyl likewise of the Yelks of Eggs, the Fat of the Thymallus Fish, which they commonly call *Ascia*; the Oyl that is pressed forth of the Kernels of Peaches, Oyl of bitter Almonds, and Oyl of Been. Or else an Unguent may be made of Borax, Camphyre, and Mans fat, or of Licharge, and the Oyl of Roses, and the Oyl of bitter Almonds mingled

what things  
they be that  
amend the  
deformed  
Cicatrices.

mingled with Honey; or else an Unguent may be made of the Juyce or Root of wild Cucumber and Honey; and with this the Cicatrice may be anointed for one day, but the day following with Milk; and this by turns from day to day must for a while be continued. Or,

Take the Mucilage of Fenugreek seed, and of Fleawort, of each two drams; Oyl of Tartar by straining half an ounce; Oyl of Roses one ounce; Ceruss, and Borax, of each one dram, and mingle them. Or,

Take the Root of Dragon-wort, of Solomons Seal, of each two drams; Bitter Almonds, Peach Kernels, of each one dram; Egg-shells burnt half a dram; Frankincense and choyce Myrrh, of each one dram; Sugar Candy three drams; the Mucilage of Fenugreek seed one ounce; Oyl of the Yelks of Eggs, and Mans fat, of each as much as wil suffice: Mingle and make a Liniment.

But if the Cicatrice be deep, it is not so to be amended by Medicaments that it may be made equal and even with the rest of the Skin; but the Cicatrice is by Section, or else by some corroding Medicament to be taken away; and the Cavity (as much as is requisite) is to be filled up with flesh, and afterwards a new Cicatrice is to be brought al over the part.

But most of al after the smal pox and Meazles there are oftentimes very frequently left behind (in the Face) unsightly and deformed Cicatrices, that cause an exceeding great eye-sore and ill-favoredness; and thereupon (that they may be amended) the help and assistance of the Physicians is oftentimes implored.

But for the taking away of these Cicatrices, those Medicaments that we a little before mentioned are very useful; and so are those likewise that have been prescribed before in this present Chapter, for the making of the Face more fair and clear. And for this (our of al these) there is more especially commended the fat of the precious Fish Thymallus or the Ascia fish.

Foresius had happy success in the use of this that followeth;

Take Oyl of sweet Almonds an ounce and half: of white Lilies one ounce: the Fat of a Capon, and Goats Fat, of each half an ounce: Sarcocol half a dram: the powder of Bryony root, and Flowerdeluce, of each one scruple: Sugar thaberget one dram. Bruise what is to be bruised into a very fine powder, and pass them through a very fine sieve, and then (if you so please) add thereto dissolved Gums; and at length let them be mingled together in a Mortar, pouring thereupon Rose-water, the Water of white Lilies, and of Beans, of each a sufficient quantity; continually stirring them, and incorporating them together; then let them by the stroking of the Hands

be passed through a woollen Cloth, and there wil run forth a soft Unguent.

### Chap. 5. Of those they cal Mother Spots, or Blemishes.

There is also another sort of Blemishes that is wont to defile and deform the Skin, and this is derived from the very first original, and that which the Infant hath contracted even in the Mothers Womb; and hereupon they are called Maternal, and original Blemishes, Spots, and Marks. Now these Spots are very various and different, sometimes of a red color, and as soon again of a dark and brown color, and oftentimes of neither of these two, but of some other color; and it is also of this or that shape and figure; and sometimes in this, sometimes in that part of the body.

#### The Causes.

There are some indeed that beleve that these spots and blemishes are excited in the body from a fortuitous and accidental concurrence of the humors. But the very truth is that such like things come not to pass by chance; but Experience it self teacheth us, that these spots depend upon the fancy and imagination of the Mother, and that by it the Infant is thus marked as they speak. There is no necessity for our heaping up of the several Authorities both of Philosophers and Physitians, as touching this subject; neither is it requisite here to recount even al the faults and things amiss in the conformation, that are caused by occasion of the imagination. For it is wel enough known unto al kind of Women, that Infants have now and then had some certain spots resembling Straw-berries, or Cherries; or else red spots like unto red Wine, or the Fire; whenas upon the sight of such like objects by the Mother, the Imagination maketh an Impression of these like colors upon the Child. And I my self knew a woman great with Child, who standing under a Mulberry Tree, there fell some of the Mulberries upon her back; whereupon the Infant that she went withal had as many excrescences in its back, resembling the shape and figure of Mulberries. But now, how it cometh to pass that the Imagination doth this, I have at large shewn you in my Tract touching the Consent and Agreement of the Chymists with Aristotle and the Galenists; Chap. 14. and in the fourth Book of our Practice, Part 2. Sect. 4. Chap. 7. Which here to repeat I hold it altogether needless.

#### Prognosticks.

This kind of Spots is very hard to Cure: and although it seem sometimes to be a little obscured, yet it soon breaketh forth again, in a manner as if it were raw; and some there are that relate how that those spots that are contracted by the occasion of Cherries, Strawberries, and Grapes,

(at



(at the time when these Fruits are wont to be ripe) wil appear, and as it were flourish again.

2. If yet notwithstanding there be Medicaments administred immediately upon the birth of the Child, they are sometimes taken away.

*The Cure.*

Women do commonly make use of the blood of the Secundine or Afterbirth for the taking away of these Spots; rubbing and cleansing the said Spots therewith while it is yet hot. And others likewise afterward make use of the Menstruous blood.

There are yet notwithstanding other cleansing Medicaments likewise (of the which we have hitherto spoken, and prescribed for the taking away of other Face-spots) that may here be made use of: others administer the Mothers fasting spirit: and others require the often instilling of the Milk that is drawn out of the Mothers Breasts upon the said spots and deformities. Which if they suffice not, then we are to have recourse unto corroding and Caustick Medicaments also, or unto the Manual operation, and the shaving of the Scarf-skin likewise. It is also good for the Mother in the morning (for some certain daies continually) to chew Mustard seed, and with it to rub the spot. And some there are that preserve that part of the Infants Navel that falleth off after the due knitting thereof, and this being dried, and afterwards moistened in the Water of the Herb Christopher they lay it upon the Spot thrice a day, so long until the said spot be wholly vanished. There is here likewise commended the distilled Water of Mountain Aven, if the Infant (so soon as it cometh forth of the Womb) be washed therewith; and the spots afterwards washed with the same Water.

Chap. 6. Of the *Volatick* or *flitting* spots of Infants.

THE German Practical Books (as we may see in the Practice of *Gabelbomerus*, and in the Physical Dispensatory of *Wittichius*, and in others) make mention (among Childrens Diseases) of a certain Affect that they cal *Denflug*, which in regard that I never saw it, I have therefore omitted, & nor at all spoken of it in my Tract of Infants Diseases. But because there are some that write that they have seen it, we wil therefore make mention thereof here in this place. Now these describe this Affect, that they are certain flitting spots, of a red or purple color, creeping up and down here and there in the Skin; which if they touch upon any orifice (as suppose, the Mouth, the Nostrils, the Eyes, and the Ears) and penetrate so far as that they reach even unto them, the Malady is then mortal. And therefore that

they may prevent this, they take Rose-water, and mingle therewith a little Saffron, and with this they anoint al the said Orifices (and the Spots themselves likewise) round about. Only they do not anoint the body towards the Feet, that to by the Feet these spots may vanish. Which spots (if any such there be) without al doubt they are a species of the *Erysipelas*; and therefore we are not only to administer that Liniment unto the orifices of the body, but we are likewise to make use of those Expulsive Medicaments also that are otherwise wont to be used in the *Erysipelas*.

Chap. 7. Of those spots and blemishes that the Germans cal *Hepatick*, or *Liver-spots*.

AS I have often told you (and cannot but here again acquaint you with it) there are many kinds of Tubercles and Spots (and these are also at this day very commonly known every where in al Nations) which by what names they were called by the Greeks or Latines we know not; whenas yet notwithstanding it is no way credible that there were no such Affects as these among the Ancients; for there were then rise in those times the same causes as now.

There is commonly known an Affect which the Germans cal *Leberflecke*, without al doubt, in regard they beleieve that it hath its original from the Liver, to wit, dark and brownish spots, or such as of yellow become somewhat blackish, as broad as the Palm of the Hand, seizing upon the Groyns especially, and the Breast, and the Back, yea and sometimes also covering the whol Breast with a certain sleight roughness of the Skin that sendeth forth as it were scales, or branny scurf; which yet notwithstanding do not stick and abide in one place alone, but are dispersed hither and thither; and one while they vanish, another while they break out and appear again. *Reinerus Solenander* (of al that I can remember) doth most plainly and clearly describe unto us these spots, in his Sect. 5. Consultat. 11. but yet he gives them no name. And *Platerus* likewise seemeth to make mention of these, when he writeth, that there are some certain dark, brownish, and dun spots, as broad as the palm of the hand, arising sometimes in some certain parts of the body, and at some certain times only, and vanishing also at some certain seasons. But he maketh the matter somewhat obscure and doubtful, in bidding us to seek for the cause, and for the Cure in the *Lentigo*. For these *Lentigines*, and the spots we now speak of are different Affects, and they have different Causes; as wil further appear from those things that have been already spoken of before in the third Chapter, touching the *Lentigines*, and shal be more

*The Affect  
Leberflecke  
what it is.*

more fully spoken of in this present Chapter. Whether these kind of spots may not be referred unto the *Vitiligo*, and the black *Albus* (as I think that they wel may) I leave it unto the judgment of the Reader. Our purpose is here in this Chapter to explain and treat of this Subject, without either the Greek or Latine name; for the German name is of al others the best known, as are also the very spots themselves.

### *The Causes.*

The Cause of these Spots is a humor very dry and Melancholy brought unto the Skin, together with the aliment of the parts; or else blood that is feculent, full of dregs, and very thick; which when it cannot al of it be assimilated, that of it that is excrementitious is thrust forth unto the Skin. But although that more feculent blood may be generated from an overdry Liver; (from whence it is that by the Germans it is called *Leberflecke*, that is to say, Liver-spots:) yet nevertheless, seeing that the Liver doth its office in its sanguifying faculty, and breedeth good blood, the Spleen without doubt is not altogether free from fault. Whereupon I have observed that after those spots (if they have continued long) Quartan Fevers have arisen. An unfit kind of Diet, and such a course of life as is apt to breed a thick and feculent blood, and a Melancholy humor, maketh very much likewise for the generation of these spots; touching which we have already spoken elsewhere.

### *Prognosticks.*

1. These very spots indeed have in themselves little or no danger; neither do they breed any kind of trouble, or any deformity visible unto the eye, when they arise in the Face and Hands, as the *Lentiginos*, but in those places that are covered with Clothes.

3. And yet notwithstanding, in regard of the Cause upon which they depend, and the vicious Constitution of the Liver, and Spleen, they presage other Diseases: and very frequently Tertian and Quartan Fevers follow these Spots.

3. Although those Spots may easily be taken away (as anon we shal shew you) yet nevertheless, unless the fault and imperfection of the blood and bowels (from which the vicious blood is generated) be taken away, they again return and flourish in a short time after.

### *The Cure.*

Since therefore these kind of Spots being taken away may again return, unless the Cause upon which they depend be likewise taken away, the vicious humor is therefore to be evacuated by Medicaments that are made of the Root of Polypody, Succory, Borrage, Spleenwort, Dodder, Maiden-hair, Egrimony, the Leaves of Sene, Rheubarb, Jalap. And this is sometimes to be repeated: and

if there be occasion, a Vein may likewise be opened.

But then in regard that these Purgers do evacuate only those humors that are collected in the Veins, but do not prevent the generation of the said humors; we must therefore more especially do the utmost of our endeavor that the vicious Constitution of the Liver and Spleen (upon which the breeding of these humors doth depend) may be amended: and this may be performed by a good and wholesom dyer, by the which that dry constitution of the Liver and Spleen may by degrees be restored unto a better condition. And therefore we are to prescribe Meats of a good Juyce, such as Goats flesh, Veal, Lamb, Pullets, Eggs, and the like, Barley, Wheat, Apples thoroughly ripe, Prunes, Raisins, Almonds. But the Patient must avoid meats that are thick, salt, & sharp, and generally al meats of an ill juyce, such as are flesh that is smoke-dried, and the like. For the Constitution of the Bowels being by the use of good meats reduced unto a better estate and condition, the vicious humors wil no more be generated, but only a good and temperate blood.

But as for what concerneth Topicks; it wil be very good in the morning to rub those parts that are thus defiled and deformed with spots. But first of al, before the Patients going into the Bath, it wil not be amiss to take the Water, or the Syrup of Fumitory, with a little Treacle. After his sweat let the place be anointed with Mustard seed with warm water reduced into the form of a Pulvis; which may be there left to continue so long, even until that a heat and a certain pricking be felt and perceived in the part; and afterward let it be washed with warm Water. Or else let it be anointed with this Mass.

Take White Sope half a pound, let it be sliced and dried; and afterwards add of Mustard seed one dram and half; the meal of Beans and Lupiner, of each two ounces; the soft Crumb of white Bread one ounce; with the juyce of Fumitory, or the sharp-pointed Dock, mingle, and use it.

### Chap. 8. Of the Itch.

Although that the Itch may be joyned together with many other Affects, as Scabs, the *Impetigo*, Leprosie, and the like; so that these being taken away, this very Affect is likewise removed; yet notwithstanding it sometimes singly and alone vexeth and troubleth persons; and so troublesome it is, that the party thus affected is often enforced to implore the help and assistance even of the Physician also; and of this we intend to treat here in this Chapter.

Now the Itch is a pain that is excited from a thin and sharp excrement sticking between the Scarf-skin and the Skin it self. For albeit while the place of the Itch be scratched, there is perceived

ved a certain seeming pleasure; yet nevertheless this pleasure doth not belong to the Nature of the Itch, but it followeth only upon the scratching, whilst that the parts that were gnawn by a sharp matter do suddenly return unto their natural state, and their wonted smoothness. For like as there is a pain excited from that sudden motion unto a preternatural state; so in like manner there is a certain pleasure felt from this sudden motion and return unto their Natural state. Now the truth is, the Itch is self ceaseth after scratching, because that the matter which was the cause of the Itching is evacuated; and because also that the solution of Continuity that exciteeth the pain, is again brought unto an Union and quietness, if the scratching be any thing strong.

### The Causes.

The neereft cause of the Itch is a salt Excrement that is biting and sharp; to wit, either meer pure Choler, or else black Choler, commonly called Melancholy; or else a salt flegm. Which excrement albeit that it be present also in the scabby Affect, yet in the Itch it is more thin, and insinuateth it self through the least particles. But it sticks between the true skin and the scarf-skin, and thereupon by its acrimony it goadeth (as I may so say) and pricketh the sensible particles in the skin, and provoketh them unto scratching. And indeed like as the Nature of the excrement it self maketh much for the sticking of the said Excrement in the Skin (this Excrement although it be thin, yet having in it a certain kind of clamminess and glewiness, by the which it sticketh very close and pertinaciously unto the parts;) so doth likewise the thickness of the skin it self, by reason of which it cannot exhale.

But now that excrement is collected by reason of the heat and driness of the Liver, the use of sharp meats, and many Spices. And hence it is that old men (those especially of them that in their youth had a hot Liver, and such of them as then used a hot kind of Diet in their meat and drink) are in their old age so sensible of the Itch, and at length come to be troubled with scabbiness. See further hereof in *Galen* his second Book of the Causes of Symptoms, and the sixth Chapter.

### The Differences.

Now according to the variety of the humor, and the nature of the places affected, there is a certain difference likewise of the Itch. For look how the matter is more or less sharp, so the Itch that is excited is more or less contumacious and troublesome. And sometimes there is felt an itching in the skin of the whol body; and sometimes in some parts only.

### Prognosticks.

1. The Itch is for the most part the forerunner

of Scabbiness shortly to follow. For if the Itch be of any long continuance, there is then at the length collected a greater abundance of the matter; and this receiving a putridness is rendered more sharp, and it corrodeth the Scarf-skin, and exciteeth Pustules.

2. By how much the worse the humor is that exciteeth the Itch, by so much the worse is the malady also. To wit, the Itch that is excited from burnt blood, or Choler, is sooner ended and gone; but that which proceedeth from salt flegm lasteth longer; and longest of all that which hath its original from burnt Melancholy.

3. The Itch in which there is great pleasure taken in the scratching thereof, is evil, because that it ariseth from a sharp Choler.

4. The Itch in old people is seldom cured, especially in those that are decrepit. For since that old age is fit for the treasuring up of these salt humors, that disposition of the body is hardly changed, and brought unto a better state. And yet notwithstanding if diligence and care be shewn, it is sometimes healed. And *Mercurialis* (in his Tract of the Diseases of the skin, Chap. 3.) relateth that *Leonellus Pius* (a man fourscore yeers old) was freed from an extraordinary great Itch by the benefit of Medicaments.

5. *Hippocrates* (in *Coacis*) writeth that the Itch in those that have Consumptions (if it succeed the suppression and binding of the Belly) is not only dangerous, but deadly. For by reason of the trouble and disquiet of the Itch, those in Consumptions can neither sleep, nor take any rest; whereupon there is little or no Concoction, and therefore they have their death hastened upon them.

### The Cure.

The Itch (seeing that it is a pain) if it be extraordinary great and vehement, and cause watchfulness, thereby decaying the strength, sheweth that mitigation by Anodynes is to be procured; but the Cause that it dependeth upon calleth for evacuation. And indeed the next Cause (since that it is a salt humor sticking in the Skin) this is likewise to be evacuated from the Skin. And in regard that this said next cause is nourished by a like humor contained in the Veins, therefore this is likewise to be evacuated. And because that this humor is generated from a distemper, and vicious disposition of the Bowels, it is therefore to be appointed: and so the generating of such like humors is to be prevented.

Those Moisteners take away the Itch that mitigate the sharp matter that is the Cause of the Itch. Now those things that evacuate these excrementitious humors from the Skin, are those Medicaments that Cleanse, Mollifie, and make thin. Purgers take away the Antecedent Cause. Alterers amend the vicious disposition of the Bowels; but more especially a good course of Di-

And



And therefore in the first place the Salt, Nitrous, and sharp humor is to be prepared and evacuated. The humor is prepared by such Medicaments as have in them a power of Cooling and Moistening; and such as withall attenuate the Thick Clammy humor; such as are Succory, Endive, Borrage, Bugloss, Fumitory, Hops, Maidenhair, Alparagus Roots, Polypody, Mother of Time, and Syrups made out of these; and more especially that of Hops, Fumitory, Succory, the Byzantine Syrup, and the Syrup of Maidenhair.

Now the Humors are evacuated by the Leaves of Sene, Polypody, black Hellebor, Jalap, the compound Syrup of Polypody, the Electuary Diacatholicon, Confection of Hamech, Extract of black Hellebor, the Melanagoge Extract. The forms of these are elsewhere propounded, and so they are also in the Chapter of the Scabs.

And sometimes also Venesection (if the Age and strength wil bear it) is to be instituted: and because that it often falleth out, that either the Hemorrhoids, or the Courses suppressed and kept it may afford matter and occasion unto this Evil; it wil therefore not be amiss to provoke and draw forth these Hemorrhoids, or Courses.

But for the tempering and allaying the heat of these Adust humors, as also of the Bowels themselves, there is nothing that doth it sooner then the Whey of Goats Milk; which may be given from one pint to three. But it wil be better for use if there be added some Juyce or Syrup of Fumitory. But that which more especially correcteth the distemper of the Bowels, and maketh for the generating of good blood, is a fit and proper Course of Diet. Let the Air be temperate, inclining unto cold and moist: and the Meats of a good Juyce, of an easie Concoction, and that are not easily corrupted, these may be altered with Borrage, Endive, and especially Lettice; which last procureth also sleep which in this Affect is very requisite and useful. But all such meats as are Sharp, Salt, Bitter, Sour, Sweet, Fat, and most of all fried meats, are to be shunned and avoided.

As touching Topicks, for the mitigating, and moderating of the Itch it self, and for the tempering of the humors Acrimony, and likewise for dissolving of the humors, a Bath of sweet Water made blood-warm is of singular use; in the which the sick Person may sit for half an hour (or a whole hour) in the morning fasting; because that it doth at once temper the heat and driness of the Bowels, and withall rarefie the Pores. But the Medicinal Baths (to wit, those of Sulphur, &c.) are more useful in the stronger dissolving of the matter; and it wil not be amiss (by turns) one while to make use of a Bath of sweet blood-warm Water, and another while of that that is salt and sulphury. For so by this means both the Itch shal be mitigated, the Pores loosened, and the humors in the Skin Cleaved away and evacu-

ated. But for discussion we may likewise make use of either common Oyl, or Oyl of sweet Almonds with Salt and Sulphur; as also *Oleum Costinum*, or Oyl of bitter Costus. Or else the body may be washed with the Decoction of Smalage, Parietary, the sharp Dock root, the Seed of the bitter Vetch Orobus, Lupines, White Cicets, Bran. Or,

Take *Lupine meal three ounces, Sulphur two ounces; mingle them with Vinegar, and anoynt the body therewith.* Or,

Take *Litharge, Sulphur, Turpentine, of each one ounce and half; the Juyce of Mallows, and Parietary, of each one ounce; Oyl of Cinnamon as much as you think fit, and mingle them.*

But then after the use of such like things as have been mentioned, the sick Person must make use of a blood-warm Bath of sweet Water.

More hereof may be seen in the first Part, Chap. 27. touching Scabbiness; since that most of those Medicaments that Cure the Scabs, and especially the dry Scabbiness, they are likewise useful in the Itch.

### Chap. 9. Of the ill and offensive Smell.

And lastly, among the Affects of the Skin, we must not pass over in silence that stinking and offensive smel that is sometimes wont to breathe forth out of the external parts of the body through the Skin; and to be very offensive, not only to the By-standers, but unto the Person himself also, whosoever he be that is troubled therewith. For the body of man, while it continueth in its right state smelleth not at all, neither doth it send forth any savor that may by any one be perceived. For every living Creature (whatever it be) doth breathe forth some kind of Smel proper unto its own kind, as *Theophrastus* teacheth us in his Book of Smels; and this he proveth by experience; by which we see that Dogs find out and follow their Masters foot-steps, by the help they have from this smel; and wild Beasts likewise do the same in seeking their Prey. But yet nevertheless if any smel shal be perceived to come from any one, this is a thing that is preternatural, as being beyond and besides Natures Intent. And as for what *Plutarch* writeth (in the life of *Alexander the Great*) that the body of the said *Alexander* sent forth a sweet and pleasant smel, this is a thing very rare; unless haply it come more from the Cloaths, then the body.

But that ill and stinking smels do oftentimes proceed from Mans body, is a thing well known by frequent observation. Now the places from whence the offensive smel cometh, are the Mouth, the Arm-pits, the Privy Parts, but more especial-

ly the Feet. But that the Ears and the Noſethrills likewise do ſometimes ſtink, this proceedeth from the Ulcers that are in them. Yet ſometimes notwithstanding, there exhaleth forth a ſtinking & offensive ſmel even out of the whole body of him that is thus affected: as for the ſtink of the Mouth, we have already ſpoken thereof, in Book 2. Part 1. Chap. 19.

But now it is not our Intent, here (in the general) to diſpute of the Nature of ſmels, what it is, and likewise by what means the ſweet or unſavoury ſmel is generated; in regard this may be known from Philoſophical and Physical Diſcourſes. In this place it is ſufficient that we know, that this offensive ſmel and ſtink proceedeth from a ſuperfluous humidity putrefying, and exhaling ſuch a like vapor.

*Hircus* } The ſtinking ſmel of the Arm-pits is called *Hircus*. *Avicen* (*Septima quinti*, Tract. 3. Chap. 23.) tells us, That there are ſome who aſſert that the Remainers of the Seed that were ſuperfluous in Generation, and brought into this place, are the cauſe of this ſtinking and offensive ſmel. Which Opinion although that *Avicen* rejecteth it, and that by others the cauſe of this ſmel is ſaid to be the aſtriction of the pores of the Skin in that place, by reaſon of which the vapors cannot freely breathe through and exhale: yet notwithstanding, this conſtriction or ſhutting up of the Pores is not ſufficient; for if it were ſo, then this Affect ſhould be moſt familiar unto old people. And this opinion albeit thus rejected by *Avicen*, doth not in any thing ſeem to be abſurd. For we know well that this Affect is moſt familiar unto Virgins that are marriageable, if at any time they grow hot with morion. And that the Teſticles, and the Seed have in them a full power of imprinting ſuch an offensive and ſtinking ſmel upon the blood, we may ſufficiently know it from Goats, and other living Creatures that are gelded. Yet nevertheless this ſeat ſmel is moſt eſpecially familiar unto thoſe that have very moiſt bodies, becauſe that moiſture is moſt obnoxious unto putridneſs. For although that all the blood do not putrefie, yet notwithstanding about the Emunctories the excrementitious vapors are apt and very ready to receive the putridneſs.

*The offensive ſmel of the privy parts in ſome.* } And for the very ſame cauſe the privy parts of many yieldeth the like offensive ſtrong ſmel, by reaſon of excrementitious humors, which from the Liver and the Veins are thruſt forth unto the Emunctories that are ſeated in the Groyns, from which ſtinking vapors do exhale.

*Stinking Feet.* } The Feet likewise of ſome have a very ſeat and ſtrong ſmel, and may truly be ſaid to ſtink. For whereaſ Nature is wont to thruſt forth the excrementitious humors unto theſe external parts,

the Feet being ſo covered and ſhod that the vapors exhaling from them cannot freely expire and breathe forth, they then and there receive a putridneſs, and from thence that ſtink is contracted. And laſtly (but this is very rare) the whole body ſtinketh (unleſs this ſmel ariſe from ſweat; as moſt frequently it doth) and that ſtrong Fear ſmel (ſtinking you may call it) that is ſometimes aſcribed unto the whole body, is properly the ſmel of the Arm-pits. And yet notwithstanding *Martial* (as we find it extant in his ſixth Book) hath this Epigram upon *Thais*.

*Thais ſtinks worſe than Fullers Pot ere ſunk that lay*

*Fur'd up to th' brim, but newly burſt, in th' miſt of th' way:*

*Worſe then the luſſful Goat new come from's Mate ere ſtink;*

*Worſe then the Dogs ſkin ſlay'd beyond great Tibers bank:*

*Worſe then th' Abortive Chick that's found in rotten Eggs;*

*Worſe then the Tankard marr'd with Corrupt Sauce, and Dregg.*

*This Cheat to damp her poiſonous ſink with ſweet Perfumes,*

*When ſhe's ſtrip't, and takes the Bath, ſhe then aſſumes*

*Philothra, Perfumes, Ojntments, or lies hid with Chalk,*

*And thus by ſhifts ſhe keeps her ſink from common Talk,*

*When ſhe hath us'd all her thouſand Arts, and thinks all wel,*

*Yet ſtil ſhe ſinks, and Thais doth like Thais ſmel.*

### Prognosticks.

1. This ſtrong and ſtinking ſmel is loathſome, and very offensive to the Standers by, and ſuch as is very unfit for Converſing with others; and it oftentimes rendereth the Wiſe unacceptable and unpleaſing in the Eyes of her Husband.

2. And yet notwithstanding this ſtinking ſmel is a ſure ſign of an overmoiſt Body, and a Body wherein there are many moiſt Excrements heaped; and this the body is very eaſily obnoxious unto in Fevers and other Diſeaſes ariſing from putridneſs.

### The Cure.

The Cure reſpecteth either the ſtink it ſelf (that may be palliated and covered by a ſweet ſmel) on the very cauſe of it; and this is the true Cure. And therefore the bodies of them that are thus troubled, are in a convenient manner, by Veniſection (if need require) and Purgation to be evacuated, and its overgreat humidity to be dried up. And here more eſpecially there is commend-

ed Aloes Rosate, which drieth the body, and powerfully preserveth it from putridness.

Let the Diet likewise be so ordered that it may tend toward driness, and resist putridness. And therefore let his Meats be sauced with Vinegar, the juyce of citrons, & oranges, Rose-water, & Rose vinegar. But there must be an abstinence from meats that are easily corrupted; such as are Cucumbers, Melons, Musk Melons, Figs, and the like. The overmuch use of Fish, especially the softer sort thereof likewise to be avoided. The Exercises of the body let them also not be neglected: neither let the sleep be excessive. Afterward we are wel to take notice from what part the stink exhaleth, and accordingly that part is to be cleansed and washed with the Decoction of Barley, Scabious, Flowerdeluce Root, Aloes, Myrrh, Guajacum wood, Citron Rind, Saunders, Aspalathus or Thorny bush; and after this a Cerote is to be imposed of Styxax Calamite, Benzoin, Cinnamom, Cloves, Myrrh, and Aloes, incorporated, and made into a mass with Rosin, and the Oyl of Lavender.

But seeing that (before such time also as the Cause be quite taken away) the said stink is troublesome and offensive unto all persons that come near; it may therefore be obscured by sweet smells, and thereby be both depressed and palliated. The Arm-pits therefore and the Groyns (as there shall be need) may be anointed with some sweet smelling Liniment or Unguent made of the Flowerdeluce Root of Florence, Cinnamom, Lign Aloes, Cloves, Gallia Moschata, Styxax Calamite, Oyl of Lavender, or Balsam of the Citron, Cloves, Cinnamom, or many of these mingled together, adding thereto Musk, and Ambar, if it seem good unto you so to do. Under the Arm-pits there may likewise be born sweet scented bals, or an Ambar Pomander. The said stinking and offensive smell is easily taken away, if the Feet be every day washed with Water or Ley, in which Bay Leaver, the Leaves of Organy, and Sage, the flowers of Rosemary, Roses, Camomile, and Flowerdeluce root are boyled; or else the Feet may be washed in Wine in which Allum hath been dissolved.

After the washing we may likewise administer those Remedies that the Greeks call *Diapasmata*; which (as *Pliny* writeth in his 13. B. chap. 2.) consist of odoriferous things that are dry; and they are the sprinklings of some dry Medicament that is made into a fine powder; with the which we are to rub the Feet, and to sprinkle some thereof betwixt the Toes. As,

Take Bay Leaves, and Organy, of each one ounce; Flowers of red Roses, the Florentine Flowerdeluce Root, and Cypress root, of each half an ounce; Bean meal, and Lupine meal, of each two ounces; Salt dried one ounce: Make a Powder.

The same course is to be taken if the whol body send forth a stinking smell. And then frequents

use must be made of Baths of the sweet smelling Herbs a little before mentioned. And if the said offensive stink cannot otherwise be obscured and palliated, we are then to make use of perfumed Garments, sweet Bals, Balsams, and the like. But it is better to take away the Cause of the offensive smell, than to go about by sweet scents and perfumes to obscure and palliate it; since that perfumes unless they be very strong, they mingle themselves with the stink, and are but as it were a vehicle unto it, and so cause the smell to be the more unfavoury. Whereas the truth is, that he that smells of nothing at all, smells best of all.

There is extant in the Physical Epistles of that famous Physitian *Georgius Horstius*, Book 2. Sect. 10. a very memorable History of a stinking and offensive smell proceeding from the whol body: where *Dr. Sigismund Snitzerus* writeth unto *Dr. Andreas Libavius*, that a certain Augustine Virgin (seventeen yeers of age) was sent unto *Bamberg*, and there put into the Monastery of the holy Sepulchre, that so she might live as a Recluse and Nun of the said Order. And that she was no sooner entered into that Monastery, but she sent forth a stinking smell (not unlike unto that of a dead putrefying Carcass) greatly offensive and displeasing unto the rest of the Nuns; whether she kept them company in their common meeting place, or else kept her self close and mew'd up in her own Cell; for even here also they smell her as they passed by: but a diligent enquiry and search being made into the cause thereof, he came (as he writeth) at length to understand that this stink of hers proceeded not from any thing amiss in her Mouth, Stomach, Womb, or any other particular part of the Body, but from the general habit, temper, and constitution of the whol body. Yet nevertheless *Libavius* (in his Epistle wherein he returneth an answer) doth not admit of this said proper Constitution and temperament of the whol Body; in regard that to render the reason thereof, is beyond the reach and power of any man living; but he rather thinks that something happening from without brought upon her that alteration of her substance, and so caused this offensive smell. And he conceiveth indeed, that this distemper was contracted in the Womb from the pollution of the blood, and the corrupted seed; and that it did consist and was nourished in the Womb of the Mother: or that this Maiden (being then but an Embryo in the Womb of the Mother, while it yet lay therein) suffered something from the nauseousness and vomiting of the Mother, and from affrightment befalling her, or from some grievous Affect that she lay under. He conceiveth moreover, that the Mother might be affrighted and terrified upon the sight of some Sepulchre, or that she happened to come in place where they were anointing some dead body; or that she took conceit, and a loathing from the putrid and stinking Excrements that



flow from such as lie in child-bed; or else that she was some way or other greatly affected by these and the like accidents. You may read more hereof in the alleadged Epistle of *Libavins*.

And another Example of the stink of the whol body the same *Libavins* hath in the following Epistle, where he writeth, that he wel knew a certain yong woman, that after she was married, and living in Wedlock, (while she had her Courses) had such a stink coming from her, as never *Jakes* had worse; and that during this time her Husband lived very discontentedly, as one much afflicted therewith.



## THE FIFTH BOOK.

### THE THIRD PART.

#### SECT. II.

#### *Of things amiss in the Hair and Nails.*

#### Chap. i. Of the Nature of the Hairs.



Frer the faults of the Skin, we wil (and that not unftly) subjoyn those things that are amiss in the Hair. For the Hair is fixed in the Skin; neither is it any where else to be found but in the Skin.

Neither indeed are the Vices of the Hair to be passed over in silence, in regard that even these are (although ignoble, yet) parts of the body. For as no man can wel deny, That the Nails, the Hoofs, and Horns of all living Creatures, and likewise that the Feathers in Birds are parts of their body; and that none can wel say that a Peacocks Tail, and all the various Feathers in Birds that are of so many several colors; I say, as none can wel affirm that these Feathers affording so great variety are a thing meerly excrementitious, and not parts of their body: so likewise it is in no wise to be denied, that the Hairs are also a part of the body. And this we are sufficiently taught by the conformation of them, by their various figure, and their different colors. The same is likewise pro-

ved by the use of them, and so also by their diseases; touching which we shal speak hereafter; and especially that we cal *Plica Polonica*. And lastly, That very effective and conformative power that the Hair hath as wel as other parts; (as we shal by and by shew you) clearly demonstrateth the truth of this. And the growing of the Hairs again after their being cut, doth not in the least prove that they therefore are no parts. For both the Nails, and the Hoofs, the Claws of Lobsters, and in certain brut Beasts the Horns, after they are shed and fallen off, yet they grow forth again; and so do likewise the Teeth in Men and Women.

We are indeed vulgarly (but erroneously) taught, That Hairs are generated when from the heat of our bodies fuliginous and thick vapors are out of the third Concoction elevated in the parts of our body, and are driven unto the pores of the Skin; in the streight passages whereof whiles they stick, they are there conglutinated; until at the length the pore being filled up, other vapors coming underneath drive it forward; and these vapors are likewise followed close by other vapors; and after them by more, and so in the end they are thrust forth out of the pore, and the hair is formed; which afterward (the like vapors succeeding, and thrusting forth the hair) and agglutinating themselves unto the root thereof it thence cometh to be prolonged.

But now if the Hair should be generated in this manner, a reason could not then be given why hair should not alike be bred in all parts of the body;

*The breeding of the Hair.*

and in those parts where they are bred, why there should be in some places more store thereof, in some less; and why some of them are alwaies growing, when others grow not at all. In the Neck and Face there grow no hairs naturally, but in the Head and Cheeks there are great abundance of them; as also in the privy Parts, in the Armpits, Eyelids, and above the Eyelids on the Eye-brows. The hair in the head and beard is ever growing, and is continually lengthened out; but those hairs that are in the Eyelids ever keep at one and the same length, and moreover they evermore remain straight. And furthermore no cause could at all be given, wherefore men only should have Beards, and that women should not likewise have them; whereas notwithstanding women have on their heads most usually the longer hair. Moreover, the hair is by *Aristotle* (in his third Book of the History of living Creatures, Chap. 12.) distinguished into that which is bred together with us (such as is the hair of the head, eyelids, & eye-brows) and that that is afterwards bred, to wit, such as the length ariseth in process of time as age comes on: of which there could no cause at all be rendered; if (according to the vulgar opinion) the hairs had their original out of those vapors that break forth.

And therefore there is some other cause of the hairs original to be sought for; in the discovery of which *Galen* hath also been very curious, and taken great pains; inasmuch that he here taketh occasion (which otherwise he doth but very seldom) to make mention of the wisdom, power, and goodness of Almighty God, the Author and Framer of all things; and he hath here endeavored to examine his Omnipotency and Wisdom in this particular, and to confute *Moses*, as we may see in his eleventh Book of the use of the Parts, Chap. 14.

But if we seriously weigh the matter, we cannot by any means grant that the hairs are bred only from the excrements, or the vapors exhaling out of the body, and sticking in some certain places; but we are rather to determine that they are generated from the formative (we may term it the pilifique or hair-breeding) faculty, for the cause a little before mentioned. And that the hairs are generated, not only from some kind of fuliginous vapors, but from a matter that is far more solid, and nearly allied unto the matter of the Nails, and Horns, we are taught even by this, that the hairs are not easily corrupted, but are (even after death) preserved a long while whole and entire. Touching which *Gabriel de Zerbin* relateth a History (in his Book of the Anatomy of Mans Body, in the Title of the Anatomy of the Hair, fol. 15.) in these very words: *At Rome we both saw and touched (saith he) the dead body of a Woman buried in the way called Appia (just opposite unto the way where Cicero was buried: and therefore it was the conjecture of the most, that this Carcase was the dead body of Tulliola the dearly beloved Daughter of the said Cicero, as it might be understood by the Inscription: this Carcase was taken out of the Grave, wherein by means of great store of Myrrh, and some Mummy likewise, it is believed that it had been preserved from corruption, from the time of Cicero, even unto the time of Pope Sixtus the fourth; being neer upon one thousand five hundred years. In this Carcase there was good store of Hair, adorned, and tied up with a Golden Fillet; as it was then the Custom to bury those of her age. This Carcase (having been also generally viewed by sundry Spectators, and almost by all the people as well as by myself) was from thence removed and brought to Rome, where in three daies time (the means that preserved it being now far distant from it) it putrefied, and was soon resolved into its first principles, and became mingled with the Earthy Element wherein it lay. And so altogether in the same manner, like as the Nails in Men and Women, the hoofs and horns in four-footed Beasts, the painted and variously colored Feathers in Birds are produced by the Formative faculty; and if they chance to fall off they are again renewed in the same manner; even so likewise the hairs are generated by the formative or pil-*

sick faculty that is by the Creator implanted in some certain parts; and hence also it is that there oftentimes ariseth such a great variety of colors in the hair. For (as we have already said) the hair in the head and beard is from day to day augmented and lengthened; but it is not so in the hair that is in the Eyelids and Eyebrows, which for the most part evermore keepeth at one and the same length. Moreover the hairs in the Eyelids stand alwaies straight forward; and if either their length be increased, or their straightness incurved, they then hinder the sight, and cause an inconvenience. Men have beards, Women have none: the Creator, to wit, having altogether destined these hairs unto a certain use; and therefore he hath given this pilifique or hair-breeding faculty unto some parts, and not unto other some; which said faculty formeth the hairs, for their certain quantity, figure, and color. In Man-kind and Animals there groweth no hair under the feet; the Hare alone excepted, which (as *Aristotle* testifieth in the third Book of his History of living Creatures, Chap. 12.) hath hair growing under the feet. And this moreover argueth that the hair in Animals proceedeth from the formative faculty; to wit, for that by the strength and force of Imagination the form and color of the hair may be changed, as out of the 30. Chapter of *Genesis*, in the History of *Jacob* sufficiently appeareth.

The matter of the Hair (as of all other parts of the body) is the blood, as likewise *Adrianus Spigelius* (in his fifth Book of the Fabrick of Mans Body, Chap. 10.) hath determined; and this also appeareth plainly in the Affect we call *Plica Polonica*, in the which if the hairs be cut, there issueth blood out of them; but this blood is of the meaner and more ignoble sort. For Nature doth the part, and dischargeth the office of a good and provident House-keeper, (distributing unto each particular person in the Family what properly belongeth unto him) and with the best and purest part of the blood she nourisheth the more noble and worthy parts of the body, distributing the residue unto the ignoble and less principal parts; to wit, into the Nails and Hairs in Man-kind; and in Bruits, into the Hairs, Hoofs, Horns, and Feathers: of which we have already likewise spoken, in the third Book of our Institutions, Part 1. Sect. 2. Chap. 3. But although it be true that the Hairs proceed from the more ignoble part of the blood, yet notwithstanding it is unctuous, and (if we may so speak with the Chymists) very Oily, and Sulphureous as it were (as appeareth by the burning of them) as having I know not what kind of neer alliance with the seed; and from hence it is that such as are lustful and glaucious are likewise hairy; and those on the other side that are not inclined unto Venery are smooth and without hair; and hence it is that Eunuchs and

The matter  
of the Hair.

and effeminate Persons produce no Beard; and those that are excessive and immoderate in the use of *Venus* are soon bald; and on the contrary, Eunuchs are never bald.

*The use of the Hair.* From all which we may likewise easily collect what the use of the Hair is. For certain it is that they have their peculiar and proper uses; since that the Hairs on the Head are (as it were) the Natural Covering thereof; the Hairs in the Eye-lids do after their manner conduce unto and further the sight; and when they are pulled forth or fall off of themselves, it much prejudiceth and hindereth the sight; the Hair of the Head, and the Beard, in men especially, serves as a great ornament unto Man, and they render him more venerable (as it were) in the account of others. But now in regard that the Hair under the Arm-pits, in the privy parts, and in the Thighs, is given us by Nature neither for a Covering, nor yet for an ornament, therefore we may conclude that Nature in the production of these Hairs sought some further end, and intended some other use; to wit, that hereby in the generating of these Hairs the more ignoble part of the blood may be consumed: from whence likewise it is, that in some they grow forth and appear more abundantly, and in others more sparingly; as Infants also are (in most parts of their body) altogether void of Hair; which notwithstanding are afterwards generated in them as they encrease in yeers, the matter of the Hair being more and more heaped up together.

of the shedding of the Hair, as we shal hereafter shew you.

As for Baldness, in the first place; look what *Patos* (that is to say, the falling down of the Leaves) is in Trees, the like is baldness in Animals, yea also in the very Trees themselves: whereupon *Aristotle* in his sixth Book of the generation of Animals, and Chap. 3. writeth: *Meli* (saith he) of all living Creatures are mostly subject unto baldness, and they evidently become so sooner then any oiber Creature whatsoever. Which kind of Affekt is in a manner general. For of Plants likewise, some of them have all-waies green Leaves, others of them lose their Leaves. The like Affekt is baldness in those men unto whom it happeneth that they should be Bald. For whenas by little and little (some now, some then) both the Leaves, and the Feathers, and the Hairs fall off; when this same Affekt shal happen universally, then it receiveth these words, Baldness, falling of the Leaf, and shedding of the Feathers. And *Columella* in his fourth Book of Husbandry, Chap. 33. saith that the young and tender Chestnut Tree that is infested by Mice and Moles, doth oftentimes become bald. Now baldness in a man, is a certain smoothness, or defect of Hair in the fore part of the Head, taking its original from the want of Aliment. And this most commonly chanceth naturally in the progress of yeers; but yet nevertheless unto some it happeneth preternaturally; which is thereupon to be accounted preternatural and vicious.

Baldness

what it is.

## Chap. 11. Of things amiss in the Hair; and first, of Baldness and want of a Beard.

And therefore, since that the Hairs are generated from the formative or Hair-breeding faculty, they have their Natural Constitution, which consisteth in their Natural magnitude, and store, figure and color; which said Constitution when once it is lost, they are then subject unto many different Vices; which if you please to call Diseases, I wil not gainsay you. And indeed the first Vice is in the defect of them; and this is either Natural, &c such as happeneth unto very many according to their age; or else it is preternatural. The first of these is termed Baldness; of the second sort, are, the Shedding or Falling off of the Hair, the *Alopecia*, and *Opbiasis*. There is indeed in all these Vices of the Hair a falling off of the Hair from the part (whatever it be) where formerly it was growing; and so (in the general) all these Vices may be comprehended under the name of *Desturium* or falling off: but use hath so far prevailed, that the name *Desturium* or falling off is (in special) taken for a certain Species

### The Causes.

Touching the Causes of Baldness, Physicians do indeed very much differ in their Opinions. But if we wel weigh the manner how Hairs are generated in the Head, the business in Controversie wil not seem at all difficult. For whereas both the matter and the Aliment is sent and supplied unto the Hairs from the Brain more especially; therefore we say indeed, that the defect of the necessary Aliment is the nearest cause of this shedding or falling off of the Hair: yet nevertheless this Affekt proceedeth oftentimes from the Constitution of the Brain; to wit, if it become more dry then is meet. *Hippocrates* tels us the same, in the sixth of his *Epidem. Comment.* 3. Tit. 1. where he thus writeth; *the Consumption of the Brain, and by reason thereof baldness; &c.* Where (as *Galen* tels us in his *Comment.* upon the place) by the Consumption of the Brain, that diminution thereof is to be understood, that happeneth unto old men from its extraordinary driness. For if the Brain once become extremely dry, then there will be nothing superfluous therein remaining that may suffice for the nourishing of the Hairs. And *Aristotle* teacheth us the same, who (in his fifth Book of the Generation of living Creatures, Chap. 3:



Chap. 3.) writeth, that baldness is caused from the scarcity of the moist heat and fatness, that is to say, of the moist Aliment. For there is in old People an excrementitious humidity, that is rather too much abounding, then any want thereof. And indeed, as we have already said, baldness is natural unto the most, because that in the progress of their years (and as old age comes on) the Brain in every one becometh more dry then is meet: but yet unto some this baldness happeneth in their Youth and green years, to wit, unto those that from some preternatural or violent cause have their Brains overdried before the time; which Causes may be many. The Chief and most principal of them all is the immoderate use of *Venus*, that powerfully drieth the Brain. Whereupon it is that before the use of *Venus* none groweth bald; Neither are Eunuchs bald at all (in the sixth Sect. of the Aphorisms, Aphor. 28.) in regard they lose nor, neither cast forth any Seed; and so the like may be said of Youths, and until they attain unto ripeness of years. Women likewise are seldom or never bald (and yet nevertheless *Albertus Magnus* testifieth that he saw two Women that were bald; in his nineteenth Book of Animals, Chap. 6.) in regard that their Constitution is naturally more moist; and therefore the Brain also in them is not so easily and soon dried; and because that Women eject not such store of Seed as the Men do. The Brain is likewise overmuch (and oversoon) dried by too much Watching, Study, and Cares.

As for that opinion of *Athaurius*, who in the first Book of his Method, Chap. 5. assigneth overmuch humidity for the Cause of baldness, if any one hath a mind to reconcile it with the opinion of *Hippocrates*, *Galen*, and *Aristotle*, he cannot more fully explain it, then by saying that the defect of Alimental humidity is indeed the Cause of Baldness; and yet notwithstanding that excrementitious humidity causeth that this baldness happeneth so much the sooner and more easily: after the very same manner that Leaves of Trees fall off indeed by reason of the want of necessary Aliment; and yet nevertheless they fall off sooner and faster, if any adventitious and Accidental humidity (Rain, or the like) happen.

### Signs Diagnostick.

The very Truth is, that baldness of it self appeareth sufficiently unto the Eye. But yet nevertheless in what respect it differeth from the other species of the falling away of the Hairs, we shall now explain unto you. This Baldness we now speak of differeth from the *Alopecia*, and the *Ophiasis* or *Areia*, in this, that these Vices are fleeting from place to place, neither (in them) do the Hairs fall off from any certain parts of the Head; whereas baldness happeneth permanent in the fore-part of the Head. But from the falling off of the Hair, in special so called, this baldness differeth, because that

in the shedding and falling of the Hair, the Hair al generally (or at least, the greater part of them, here and there, up and down throughout the whole Head) fall off; but in baldness this falling of the Hair is only in the fore part of the Head.

### Prognosticks.

1. Baldness indeed in it self bringeth no danger at all (but that it causeth that the Head lieth the more open to be hurt by the externall injuries of the Air; and that it is as it were the forerunner and sign of the hastening of our Mortall Nature towards her dissolution) and yet notwithstanding it causeth a great deformity and unsightliness (especially if it happen early, in the time of Youth) and that that is resented and disliked by the most of those that behold it: and it is reported, that *Caius Julius Caesar* the Emperor (famous both for his learning, and likewise for his warlike exploits) could so brook and bear the baldness wherewith he was affected, that after his making triall of very many Remedies to no purpose, it was at length granted unto him by the Senate, that he might perpetually wear the Lawrel: who if he were now at this day living, might easily cover his baldness with a Covering of Hair made of other mens Hair (we in England call it a Perriwig) which is now adays in very great and common use.

2. But that baldness that ariseth either from old age, or immaturely in the time of Youth, will admit of no Cure; like as neither doth the shedding of the Teeth in such as have attained unto their full growth, since that the defect of that Alimentary humidity cannot by any means be restored.

3. Those that are Bald have not the Varices (viz. the crooked (swollen) Veins in the Hipps, &c.) very great: but those that during their baldness have these Varices coming upon them, these again recover their Hair; as *Hippocrates* tells us in the sixth of his Aphorisms, Aphor. 34. But this Aphorism is false, as *Galen* in his Commentary, teacheth us: since that we are none of us ignorant that Baldness is an incurable Affection; and that it is likewise false, that great Varices never happen unto those that are bald; and also that upon the arising of the Varices the baldness ceaseth: unless haply (as some will have it) he call that *Calvitium* or baldness, that Physicians term *Madarosis*, that is, the falling off of the Hair. For this indeed in regard that it hath its Original from vicious humors (like as that we call *Ophiasis* and *Alopecia*) these very depraved humors being translated into the Thighs may cause the Varices, and so the man may possibly recover and receive his Hair again. For if there were at first a loss of the Hair by reason of their roots being corrupted by the said vicious humors; then good ground there is to believe that this Hair will again now return unto its Naturall state, upon the translation of the aforesaid humors unto some other place.

The

*The Cure.*

But although that baldness when it is arrived at its height can no waies be cured: yet nevertheless in regard that baldness doth both exceedingly incommode the health, and cause deformity; we must therefore do our endeavor al that may be, to prevent and retard it. Which can by no other means be done, than by repairing the aliment of the hair that beginneth to fail, and attracting it unto the skin of the head. And therefore we must do our utmost that the fat and hot humidity by which the hairs are nourished may be preserved and drawn unto the skin. There are some likewise that add moderate astringents, if the skin be become thin through the heat of the head. But whenas baldness doth arise from the defect of Aliment; and whenas by reason of driness the pores and passages of the skin are closed and altogether shut up, there is no need at al of Astringents; for if they be administred, then the Aliment that floweth unto the hairs will be altogether repressed.

Now what kind of Medicaments they are that correct the distemper of the head, and the driness of the brain, we have already shewn you in the first Book of our Practice, Part 1. Chap. 4. But that the Aliment may be attracted unto the roots of the hairs, frictions are to be first used before the Medicaments; which yet notwithstanding ought to be moderate, that they may only attract the Aliment, and not discuss it. But these Medicaments ought to be hot, and so attracting, with a moderate astringtion, by which the Aliment may be drawn unto the roots of the hair, and there detained. *Dioscorides* in his first Book, Chap. 110. and *Galen* in his seventh Book of the faculty of Simples, §. *Cistus*, commend Ladanum; and yet more in case of the falling of the hair, than in baldness: yet nevertheless very many there are that use the same likewise for baldness, and especially the Oyl thereof, which they prepare in this manner:

Take of the best Ladanum cut into smal pieces one pound; pour thereunto of Rose-water six ounces; Oyl of sweet Almonds four ounces; boyl them together, and strain it often, until it be cleer. Or let the Ladanum be dissolved in the Oyl of Mastick, and then strained. It is very good likewise to wash the head with the Decoction of Fenugreek. See more of these Medicaments for this use in *Galen* his first Book of the Composition of Medicaments according to the places, Chap. 1. And we shal also mention some more of them in the following Chapter.

*The Dyet.*

And first of al, a right Course and Order of Diet conduceth very much unto the retarding of baldness. Let the meats therefore that the Patient eateth be of a good juyce and nourishment,

(that is to say, such as affordeth a fat juyce) and of easie concoction. Let him abstain from meats that are salt, sharp, sower, and austere (such as are most of the Summer Fruits) that yield but little aliment, and that also very fluid. Let him drink likewise be such as yieldeth a good juyce. But let him abstain from strong and old Wine, having in it a power to dry overmuch. Venery is especially hurtful in this Affect. Watchings, griefs, cares, and the anxieties of the mind are also hurtful in this Affect.

*The want of a Beard.*

We said before that the Beard was an Ornament unto a Man; and therefore if this be wanting in Men, it causeth a very great deformity. Now this may fail either altogether, as in Eunuchs, and certain others that are womanish and have altogether effeminate bodies: or else it breaketh forth very slowly, or groweth not so thick as it is wont. Al which happen, either from a defect of the matter, or else by reason of the thickness of the Skin out of which it is to break forth; or from such a Constitution as hindereth the appearing and growth of a Beard.

Now whereas the want of a Beard in men of that age wherein Beards are wont to bud and grow forth, doth breed some kind of unseemliness and deformity; and that such as are at their full age (that they may hereby procure unto themselves both gravity, and respect from others) do much desire and endeavor after a Beard; it is therefore very usual upon this very account to cal in the help and assistance of the Physician. But the truth is, the event seldom answereth the desire, or at least but very slowly, to wit, when Nature of her own accord attempteth the production thereof.

But yet nevertheless I think it not amiss here to give you a Medicament or two, for the aforesaid purpose: and more you shal have in the Chapter following.

Take Oyl in which Southernwood hath been boyled two ounces; the ashes of Bees or Wasps one dram; Mous-tirds one scruple; Honey one ounce; Ladanum three drams; Bears fat as much as wil suffice: Make a Liniment. Or,

Boyl Mugwort in Oyl, and let the place be anointed with the Oyl; which maketh very much for the forwarding of the slow growth of the Beard. Or,

Take Powder of the seed of Nightshade as much as you please, and Oyl of Eggs a sufficient quantity: mingle them, &c.

Or let the place be often washed with the Decoction of Southernwood, Maidenhair, Golden Maidenhair, Rosemary, and the Reed root: and afterward let it be anointed with the Unguent that is made of Ladanum.

And if it be true (as some there are that think it is) that these Medicaments that even now we named,

named, and those that we shal hereafter further mention do not al of them generate hairs only by their manifest qualities, and by taking away the Causes of the falling off of the hair; but that they likewise produce hair by some occult quality that is in them; such like Medicaments are therefore especially to take place in the production of a Beard, not where there hath been a shedding or falling off of the hairs of the Beard, but where they never as yet grew.

It is also wel known, that it much conduceth unto the speedy growing of the Beard, if the first soft hairy down upon the Chin be often shaved off; by which means the Aliment is the more abundantly allured and drawn unto the Roots of the hair.

For the furthering and hastening of the Beard, these following Medicaments are likewise commended.

Take Oyl of Will, Oyl of Spike, of each five ounces; the tender Sprigs of Southernwood two handfulls; Squills three drams; the best Wine three ounces; let them boyl until the Wine be consumed, and then use it. Or,

Take Oyl of Garden Pinky, and sweet smelling Spike, of each three ounces; Oyl of Roses four ounces; of Cloves one dram; of Ladanum two drams; sweet smelling Wine two ounces. Let them boyl al of them unto the consumption of the Wine. Add of Musk one scruple, and mingle them.

### Chap. 3. Of the shedding of the Hair.

**A**Lthough (as we have already said) al shedding of the Hair may be termed a *Descurvium* or falling off: yet nevertheless use and custom have so far prevailed, that the shedding of the Hair here and there in the Head (in al or most parts thereof) is in special termed a *Descurvium* or falling of the Hair; so that they fal not only in one place, but either they al fal off throughout the whol head, or at least they most of them fal away in most parts of the Head.

#### The Causes.

There is not one Cause alone of this *Descurvium* of the Hair, but the Causes are many; to wit, Either the want of Aliment, or the pravity of the humors corroding the roots of the hair, or the thinness of the skin, not admitting the alimēt of the hair. The two former Causes have their place in those that are Phebisical; in whom if the hair fal off, this cometh to pass (as Galen tells us in his Comment. Aphorism 10. Sect. 5.) because there is here both the greatest defect of Aliment, and sometimes also the corruption of the humors. The same happeneth for the most part in malignant Fevers, such especially of them in which

(the Brain being withal affected) the sick persons are seized on by a Delirye or Dotage. For even in these Fevers also the sick parties are greatly extenuated, and there is wanting unto the body a necessary aliment, and the depraved humors likewise lie gnawing at the roots of the hair, and eat them asunder. The hair also falleth off in those that have the French Disease, by reason of the pravity of the humors; which sometimes happeneth likewise unto those that have drunk poison: and it is reported for a truth, That whosoever toucheth the Salamander his hairs wil shed and fall away. But sometimes also the hair falls off by reason of the thinness of the skin; and this happeneth unto Women, and especially in the Summer time. And hence it is, that those who travel out of Germany into Italy, or other hot Regions, find now and then this shedding of their hair: for by the heat of the Ambient Air the Skin is made thin; and it chanceth also that the matter out of which the hair ought to be generated doth withal transpire.

#### Signs Diagnostick.

The *Descurvium* or falling of the hair that is in special so called, is easily known by the continual shedding of the hair. But it is distinguished from baldness, the *Alopecia*, and *Opbiasis*, because that in Baldness the hair falls off in the fore part of the head only; but in *Alopecia* and *Opbiasis* the hair falls from al parts of the head, and the head alone; but then in this *Descurvium* (the Affect we now speak of) the hairs fal off in al parts of the body equally, one while more, and another while fewer of them. But from what cause it is that they fal off, may be known from the causes that went before. For if there went before any sickness that was in it self apt to consume the aliment of the Body, it is then credible that the shedding of the hair proceedeth from the scarcity of the Aliment. But if vitious, malignant, and depraved humors excite and cause any disease, it is then an argument that the falling of the hair proceedeth likewise from the pravity of the humors. If lastly, there went before causes rarefying the skin, it is then probable, that the said *Descurvium* of the hair proceedeth from the thinness of the Skin.

#### Prognosticks.

1. Among al other the species of the shedding of the hair, this *Descurvium* in special so called is most easily cured; unless the cause be such as is not to be removed. For the skin hath not as yet contracted any preternatural disposition that is difficultly cured. And therefore it is that the *Descurvium* or falling of the hair that happeneth after acute and malignant Fevers is easily cured; when the Fever being healed, there is an Aliment again supplied unto the body; and the hair that is already fallen off is for the most part restored without



without the use of any Medicaments.

2. But in the Consumption such a defect of the Aliment, and such a vice of the humors cannot by any means be amended. And therefore in this case there is not only no cure to be had for this shedding of the hair, but the sick persons die also. And therefore in such as are in Consumptions the falling of the hair is a sure and certain sign of Death approaching; as in the fifth of the Aphorisms, Aphor. 11.

3. If the hair fall off by reason of the skins thinness, it may then by the use of thickeners be restored without any great difficulty.

### The Cure.

The shedding of the hair is cured by taking away the cause upon which it dependeth. If therefore the hairs fall away from the scarcity and want of Aliment, it sheweth us, that we must use our endeavor that there may be sufficient aliment bred in the body, and that that which is bred may be drawn unto the skin of the head. If this *Desfluvium* be from the depraved humors, and these be supplied from all parts of the body, they are then to be evacuated; but if they lie only at the roots of the hair, they are then to be discussed. If these humors be of a poysonous Nature (as in the French Disease) we ought then to meet with and oppose that poyton. If the Affect proceed from the thinness of the skin, the skin is then to be thickened.

If therefore this *Desfluvium* or falling of the hair arise from the want of Aliment, we ought then especially to take care that by appointing a due & meet course of Diet there may be generated sufficient store of good blood. But for the drawing of this unto the place affected, frictions are more especially to be made use of. Yea indeed, almost before the use of any Topicks, the frictions or rubbings of the head are to be administered, as *Galen* teacheth us in his first Book of the Composition of Medicaments according to the places, Chap. 2. For Friction doth both attract the Aliment unto the head, and also strengthen and thicken the skin.

If this falling of the hair proceed from the pravity of the humors, then universal purgations (if need require) being first premised, the head is often to be rubbed, and discussives are to be administered; but yet let the Discussers be moderate (especially if there be a concurrence of an abundant aliment) lest that by the excessive and overmuch use of them the aliment be likewise dissipated, and the skin rendered over thin: and therefore *Ladanum* is very fitly mingled together with the Unguents.

If the *Desfluvium* depend wholly upon the thinness of the skin, then we ought to apply those things that condense and thicken the skin. *Galen* commendeth especially *Ladanum*, the Oyl of Mastick, and the Oyl of Myrtle mingled together:

Or else let *Ladanum* be dissolved in Wine, and so made use of.

And *Ladanum* is also very fitly administered in almost every falling off of the hair. But in regard that it is of soothick consistence in it self to be anointed with, it is therefore to be dissolved in something that is liquid (Wine or Oyl) and indeed such an Oyl is to be made choise of that may satisfy and answer the cause.

But seeing that Unguents and Oyls are troublesome unto many, who will not endure that their heads should be anointed with Oynments or Oyls; therefore for these we must provide Lotions for the head (that please them better) which are to be made of Southernwood, Maidenhair, Golden Maidenhair, Mastick, Roses, Rosemarys, *Ladanum*.

And we must here again repeat what we gave you notice of about the end of the foregoing Chapter, to wit, That there are some who appoint (and not without good reason) such kind of Medicaments to be made (for the recovery of the hair) that do not only by a manifest quality take away the cause of the shedding of the hair, but such as also by an occult and peculiar faculty do conduce unto the breeding of hair; and such as these are only known by experience. And these are, all the Capillary Herbs, Southernwood, Reed root, sharp-dock root, the root of the greater Bur, Asarabacca, *Ladanum*, Honey (and Water distilled from it) Bees beaten together with the Honey-combs, or the powder and ashes of them, as also of Wasps, Flies, Moles, Mice, the Land Urchin, Bears fat, and Serpents iac. Of which there are made many Compositions. As for instance,

Take the Rind of the Reed root burnt, Bees ashes, of each two drams; Southernwood burnt one dram; *Ladanum* two drams; Honey half an ounce; Oyl of sweet Almonds, and Bears fat, of each as much as wil suffice, and make a Lintiment.

For the shedding of the hair after sicknesses, this following is found to be good.

Take Maidenhair, Southernwood, Golden Maidenhair, of each half a handful; the Leaves of Myrtle, of Roses, and of Wormwood, of each two pugils: boyl them in a sufficient quantity of common Oyl and red Wine, until the Wine be wasted; then strain and squeeze them hard.

Take of the aforesaid Oyl four ounces; *Ladanum* one ounce; Mastick half an ounce, and mingle them according to art. Or,

Take Root of the Bur-dock six ounces; Maidenhair three handfuls; Southernwood one handful. Pour thereunto as much white Wine as wil suffice; and let them be distilled in a bladder: Unto what is thus distilled, if you please you may add the Water of Honey.

Or else let the Roots of the Bur-dock be boyled in Ley, and the head washed therewith.

### Chap. 4. Of Alopecia, and Ophiasis.

**Alopecia:** **T**Hat which is called *Alopecia* and *Ophiasis* is a peculiar kind of the falling of the Hair. *Alopecia* is so termed from Foxes; because that this kind of shedding of the

**Ophiasis:** Hair is familiar unto them. But *Ophiasis* is so called from its figure, because that the bald and smooth parts, destitute of their Hair, and writhed, seem like unto Serpents. It is common unto both these Affects, that in them the Hairs fall off *areatim* (as they term it) and hence it is likewise that this Ma-

**Area:** lady is in the general called *Area*. And *Celsus* in one and the same Chapter treateth of *Area*, *Alopecia*, and *Ophiasis*. Now the name of *Area* is imposed upon this Affect from Country Garden-plats. For as there the Beds or quarters are distinct, and in certain places only; and as these Beds when they are void of Plants are Naked and bare; so it is likewise in these *Area*; for here in certain places the Skin appeareth smooth, bare, and slippery. These Affects differ only in their figure. For *Alopecia* hath no certain figure, but (as *Celsus* saith) is dilated *under any kind of figure*. But the *Ophiasis* creepeth up and down writhingly like unto a Serpent; and one while being extended from the hinder part of the Head it creepeth along on both sides the Head even unto the Ears, the breadth almost of two fingers; and as soon again being carried beyond the Ears it creepeth forward Serpent-like even unto the very Forehead it self. And moreover there is in the *Ophiasis* far more hurt and danger in the Cause thereof; so that not only the roots of the Hair, but even the Skin it self also is eaten and gnawn thor-

**The definition of Alopecia and Ophiasis:**

row, to wit, as far as the roots of the Hair reach. And so *Alopecia* and *Ophiasis* may be thus defined, that they are a falling off of the Hair after the aforesaid manner, *areatim*, ha-

ving its Original from a corrupt and depraved humor gnawing assunder the roots of the Hair.

The Author of the Book of Medicaments soon provided, referreth the *Alopecia* and *Ophiasis* unto those Affectiōns that viciate and marr the Colour of the Hair. But we are to know that this is not proper unto the said *Area* falling off of the Hair; but that this change of Color in the Hair doth either precede the *Alopecia* and *Ophiasis* (to wit, when from a vicious Nurriment the Hair first becometh white, but afterwards they fall off) or else the colors of the Hair are changed after the *Alopecia* and *Ophiasis*. For when after the *Area* Hairs are again bred, they are then either white, or yellow; like as it is in Horses, after that the hair is fallen off by reason of some Ul-

cer caused by attrition or gauling, there is wont in the place thereof to appear and grow again white hairs; which happeneth from a vicious Nurriment, and the weakness of the Skin. And of this *Celsus* gives us notice, in his sixth Book, Chapter 1. to wit, that the *Ophiasis* is extended unto the Hair of the Head alone, but that *Alopecia* may be extended even unto the very Beard also.

#### The Causes.

The Cause of both these Maladies is a depraved and sharp humor of (eating assunder the roots the Hair) of whatsoever kind it be. But for the most part notwithstanding this Malady is caused by a salt flegm, adust, or putrified. Whereupon *Galen* in his Book of the differences of Symptoms, and Chap. 4. writeth, that these Vices follow a depraved Nutrition of the Skin of the Head. But that one while the *Alopecia*, & another while the *Ophiasis* is excited; and that the Hairs do sometimes constitute a strait and direct *Area*, and sometimes that that is winding and writhed, the Cause of this is the great abundance, and the quality of the matter. For if there be an extraordinary great store thereof, and it be likewise thin, then it equally and alike eateth through the Hair in the more and greater places; but if the Matter be less, and mingled with a thick humor, then there followeth an unequal and writhed *Defluvium* or shedding of the Hair; because that the humors being unequal and mingled do not flow right forward, but creeping along obliquely they gnaw assunder the hair.

The more remote Causes are the heat of the Liver and Head, and especially the fault of the first and second Concoction, by reason whereof salt and sharp humors are generated; which although it may happen in every age, yet nevertheless it happeneth more especially in Childhood and Youth; and it followeth the Affects, *Tinea*, *Achores*, and *Favi*, by reason of the Causes that we mentioned in the Diseases of Children.

And sometimes likewise External and Malignant Causes make very much for the generating of this Disease: among which *Galen* in his first Book of the Composit. of Medicam. according to the places, Chap. 2. reckoneth up Mushrooms, because that they make very much for the generating of vicious and corrupt humors. And hither likewise belongeth the poyson of the French Disease, in regard that this also eateth through the roots of the hair; which other poysons may likewise do.

#### Signs Diagnostick.

We have already before told you in what respects this falling of the Hair differeth from baldness, and that shedding of the Hair that we call *Defluvium*. But *Alopecia* differeth and is known from

from *Ophiasis* by the very figure of the *Area*, and because that in the *Alopecia* the hair only falleth off, without any hurt as all of the Skin. But in the *Ophiasis* there is not only a falling off of the hair, but likewise an excoriation of the Skin. And the very color of the skin is also changed; and in some it appeareth more whitish; in some more pale, and in others more black; and if it be pricked, there floweth forth a setous whitish blood. Touching the difference between *Alopecia* and *Ophiasis*, *Celsus* in his sixth Book, and Chap. 4. hath these words: *That Area* (saith he) *that is termed Alopecia is dilated under all kind of Figures; and it happeneth in the hair of the Head, and in the Beard. But that which from the likeness of a Serpent is called Ophiasis, beginneth from the hinder part of the Head, and is not extended above two fingers in length; it Creepeth on both sides the Head even unto the Ears: and in some unto their Foreheads also: the former of these in all Ages, but this latter only in Infants.*

But *Alopecia* and *Ophiasis* differ from *Tinea*, in this, because that in *Ophiasis* the Excoriation of the Skin is superficial; and when it is cured, the hair groweth again. But in *Tinea* the excoriation and Ulceration is more deep; and the skin is oftentimes so corrupted, that the hair never groweth again.

As for what concerneth the signs of the Causes, the Skin it self sheweth what kind of humor it is that offendeth: which that it may be the more exactly known, the hair that remaineth behind is to be shaven away, and the Skin to be gently rubbed: there are other signs also that wil instruct and teach us what kind of humor it is that aboundeth in the body. The hairs likewise that grow anew, by the various colour that they have (according to the Nature of the peccant humor) wil shew us what humor is the Cause of this Malady.

### Prognosticks.

1. *Alopecia* and *Ophiasis* although they bring not much danger along with them, yet nevertheless they cause a great deformity: and among the Romans those Slaves that were disfigured by the said *Area*, and especially by the *Alopecia*, were sold at a far lower rate then other Slaves. And in our daies also, these *Areae* (in regard that they cause a suspicion of the French Pox) are therefore accounted very disgraceful unto him that is affected therewith.

2. But whether the *Ophiasis*, or the *Alopecia*, may be soonest and most easily cured it is a great question among Authors; and they herein much differ. *Celsus* and *Avenzoar* are of Opinion that *Ophiasis* is more easily cured then *Alopecia*. And on the Contrary, *Alexander* in his first Book, Chap. 2. and *Serapio* in his first Book, Chap. 1. teach us that the *Alopecia* is more easily cured

then *Ophiasis*. But *Celsus* seemeth to speak only of the *Alopecia* of Infants; which in the course of years and change of age is of it self oftentimes cured. But if *Alopecia* and *Ophiasis* be such as are grown to maturity, or likewise in one and the same age be compared the one with the other, then the *Ophiasis* seemeth to be altogether the more difficult to be cured, in regard that it hath its original from a matter more thick and far worse then the former, and such as doth not only eat assunder the roots of the hairs, but likewise even the very Skin it self; which is never done in the *Alopecia*.

3. Yet notwithstanding by how much the longer either of these Maladies hath been and continued, by so much the more difficult is the Cure thereof; and by how much the less while they have continued, by so much the more easily are they cured.

4. If by Rubbing the place become red, there is then hope of Cure; the sooner it is thus, the more easie the Cure: but if it wax not red at all, then there remaineth no hope at all of any Cure.

5. That kind of *Area* is also the worst that hath made the Skin thick, and somewhat far, and slick or slippery in all the parts affected.

6. *Alopecia* and *Ophiasis* that proceed from the Leprosie are altogether incurable; and that that hath its original from the French Disease is not to be Cured untill the Disease it self be Cured.

7. There then shines forth some hope of a Cure to follow, when the extremities of the *Areae* that are neereft unto the remaining hairs do again begin to send forth other hair. For then those parts that are nigh unto the sound have the less receded from their Naturall State, and so consequently will the sooner again return unto their Natural State, and begin to produce hair.

### The Cure.

If a Vicious humor abound in the whole body, this is first of all to be evacuated, for otherwise it wil continually cherish the Malady, by fomenting the matter thereof. And so if the French Disease be Joyned therewith, this is first to be cured; in regard that the *Areae* cannot be taken away, unless this be first removed. As likewise the distemper of the Bowels upon which the breeding of the vicious humors doth very much depend, is to be corrected. And the antecedent Cause being taken away, the Containing Cause of the *Areae* is then to be removed; which *Galen* doth by Repellers and Digestives: but we ought wihal to do our endeavor, that the skin may be restored unto its natural temper.

And therefore in the first place the whol body is to be purged by fit and proper Medicaments, according to the Nature of the peccant humor. And



moreover *Galen* for the particular evacuation of the head, administred Apoplegmatisms also, which we have elsewhere explained.

But for the matter which is yet in its flux, and in the beginning thereof, before the *Area* are yet made, *Galen* maketh use likewise of Repellers. And the same likewise we are taught by *Avicenn*; where he telleth us that the Medicaments in the *Alopecia* ought likewise by a moderate astringent to corroborate the skin of the head; for in the seventh part of his fourth Book, Tract. 1. Chap. 6. he saith thus: *And it is requisite that there be in those Medicaments a comforting and strengthening, thereby to prevent and binder in the head the reception of malignant matter.* But otherwise, and if the *Alopecia* and *Opthiasis* be already present, Repelling Medicaments have then no place; even as likewise they have no place in *Scabies* or *Scabbiness*.

But if the *Area* be already made, and the matter impacted into the skin, we ought then to use Digestives. Now these are hot, of thin parts, and not greatly drying. For if we make use of those things that dry overmuch, not only the vicious humors, but even the very aliment of the hair will be thereby dissipated. Yea, since that in the *Area* confirmed the distemper of the skin is hot and dry; therefore cold and moist Medicaments are to be mingled with the rest.

But now these Medicaments that take away the highest cause of this Malady, are termed *Metasyncretica*; of the preparing of which *Galen* teacheth in his first Book of the Composition of Medicaments according to their places, Chap. 2. and in his fourteenth Book of the Method of Physick, Chap. 12. To wit, in the first place, if there yet remain any hairs that are corrupted, these are to be plucked out either with the *Volsella* (an Instrument purposely made to pull out hairs) or they are to be drawn forth with a *Dropacism*, or else the place may be shaven with a Razor. And then afterward let the head be washed with a *Ley* in which Maidenhair, Golden Maidenhair, Southernwood, and the like Plants have been boyled. After the washing, let the place be rubbed with a Linen cloth (that is not over moist, nor yet over dry) until the skin begin to be red: when this is done, then let Topicks be administred. Now such like Medicaments are, Mustard seed, Cresses, white Lily Roots, which (as it is said) will likewise restore those hairs that burnt places have been deprived of by fire or scalding; Rocket seed, Nitre, Oyl of Bayes, liquid Pitch, Sulphur, the powder and ashes of Southernwood, the Root of Sowbread, and Hellebor, the seed of Stavetacre, and Doves dung; and (these being the strongest and most powerful of all) *Thapsia* and *Euphorbium*. Which aforesaid Medicaments notwithstanding by how much the newer and fresher they are, by so much the sharper they are also; and the older they be, the more they lay aside their sharpness

and carthness. But out of these such of them are to be made choise of that are proper and convenient unto each of these Affects; and these are also rightly to be administred. For those Medicaments that were by us even now mentioned, they are not all of them fit for all kinds of *Area*, or at all times, or after any manner administred, or in all ages; but unto each of these there are such Medicaments as are fit and proper; and each of these Medicaments have likewise their due time and manner of use: and unto the Malady when it first begins, (and being yet but small) the weaker sort of them are to be administred; but if the Malady be inveterate, then the stronger sort of them: and unto the softer bodies (such as are the bodies of Children and Women) the weaker Medicaments; but unto such as are at their full age, and unto Men, the stronger sort of Medicaments are to be applied.

*Galen* acquaints us with divers Compositions that had been examined by long Experience, and approved of (in his first Book of the Composition of Medicaments according to the places, Chap. 1.) to wit, Those of *Hieras*, *Crito*, *Orestinus*, *Ortho* the Sicilian, *Cleopatra*, *Archigenes*, *Asclepias*, *Dionysodorus*, *Soranus*, and others.

*Galen* himself commenderh this following:

Take Leaves of the Greek Reed burnt half an ounce; the Urchin burnt one dram; *Moussedung* two drams: bruise and mingle them well with Vinegar, and so anoint the place therewith. Or,

Take ashes of the burnt Reed, Goats hair burnt, Maidenhair, Bears fat, liquid Pitch, Rosin of the Cedar, of each alike: and this he calleth the admirable Remedy. Or,

Take House Mice burnt, a piece of linen Cloth burnt, Horse Teeth burnt, Bears Fat, the Marrow of a Hart, the rind of the Reed, equal parts of all; Honey as much as will suffice; and make an Unguent. Or,

Take *Euphorbium*, *Thapsia*, Oyl of Bayes, of each two drams; live Sulphur, both the Hellebors, of each one dram; Add Wax six drams; which may be moistened with Oyl of Bayes, or old Oyl, or liquid Pitch, and mingle them together: And this Medicament is of all other the strongest, and therefore most convenient for the Malady when it is become inveterate.

In the Malady that is more mild it will be sufficient to use a Medicament made of Southernwood, or the roots of the Reed burnt, mixt and incorporated with old Oyl, Oyl of Bayes, or liquid Pitch. Or,

Take Rocket seed, Cresser, Nitre, equal parts of them all, and let them be mingled with Oyl of Bayes, or liquid Pitch.

This that followeth is yet more mild, and therefore fit for Women and Children.

Take Southernwood, the ashes of the Root and Rind of the Reed, Frankincense, of each of these

these equal parts; Bears Fat, and Oyl of bitter Almonds, of each as much as will suffice, and make a Liniment.

But if it be needful to make it stronger, then add thereto *Spuma Maris*, live Sulphur, Bulls Gall, Rocket seed, Nitre, or even *Thapsia* also. Or,

Take Mustard seed, *Thapsia*, the seed of *Cress*, equal parts of them all; when you have beaten them into a very fine powder, then add Oyl of *Bayer*, and *Rosin*, of each alike, as much as will suffice; and at the fire make hereof an Emplaster according to art.

Such like Medicaments (good store of them) are likewise extant, and in divers places here and there, in the Writings of *Valescus de Taranta*, *Rondeletius*, *Vallerius*, *Trincavellius*, and other Practical Physicians.

And this is likewise in the use of the stronger sort of Medicaments to be observed, that in the beginning, the more liquid and softer Medicaments, and such as are tempered by the mixture of Oyls (that somewhat abate the force of the stronger Medicaments) may be administered; and after the use of the first Medicament we are to look what alteration it hath made in the part affected; and afterward (as need shall require) the strength thereof is either to be augmented or abated. Now whether or no there be any alteration made may be discovered by this especially, if we take notice, and well observe, whether the skin after the use of the Medicament be made ever a whit the redder, or no; or whether it were made red by a light and gentle, or else by a stronger friction. For we ought to be very cautious, that the skin be not burnt through by the too often repeated use of the stronger Medicaments. And as touching the use of Compound Medicaments, you are likewise to take this advice, to wit, That if the hair be altogether shaven off, it will be then more convenient to apply Medicaments of a more solid form, such as are Emplasters: but if the hair be not shaven away, then those Medicaments that are liquid and soft, such as are Liniments and Unguents.

But then the weaker Topical Medicaments are to be continued unto the head both day and night, that so they may exercise and put forth their strength and vertue. But if the Medicaments be of the stronger sort, they are then to be detained upon the head so long, until there appear to be some alteration in the skin caused by them, and that there begin to arise some kind of pain. And therefore in the use of the stronger, the place affected is daily once or twice to be viewed, and if the Medicaments have strongly affected the place, we are then to return to the milder sort of them; and the place is to be anointed with Goose Fat, Oyl of Dill, or the like Anodyne Medicament. For if the stronger Medicaments be too long kept upon the skin, it will burn the same. And *Christophorus a Vega* writeth, that he had seen very

many who by the use of Medicaments that were overstrong were thereby brought unto a perpetual baldness, and continued beardless unto their dying day.

### The Diet.

A good and due course of Diet maketh very much also for the curing of the said *Alopecia* and *Opbiasis*; which let it be such as that good blood may be thereby bred, and the encrease of bad humors prevented. And therefore let the Patients meat be of a good juyce, that may bring the depraved humors unto a benign and good temper. Let the Patient abstain from Wine, before his body be purged, because that Wine carrieth the bad humors that are detained in the body along with it into the Veins. But when the body shall be sufficiently purged, then the Patient may drink that Wine that is temperate and a little sweeter, seeing that it nourisheth well, and breedeth good blood. Let the Air in which he breatheth be hot.

### Chap. 5. Of Tinea, or Worms eating off the roots of the Hair.

Among those Affects in the which the Hairs fall off, that Affect is by no means to be passed over in silence, in the which the hairs indeed, not whol, but in pieces (or piece-meal, as we say) fall off, being eaten through and consumed by certain Worms. There are but very few Authors that make mention of this Affect; neither (as it seems) was it known unto *Platerus* (though otherwise a most experienced Physician) whom we find thus writing; There are some (saith he) who affirm that the hairs of the head and beard have been gnawn and eaten asunder by certain Worms so smal that they could hardly be discerned. But yet nevertheless it is an Affect that is commonly known with us; and I my self have often seen it, and it hath been offered unto me to Cure. Our Germans call it *Haarmilben* oder *Milen*. And this kind of smal Worms that are scarcely visible to the Eye (and which whether they have in them any life or not, we cannot discover but only by their motion) are bred in Cheese, Honey, (if there be but a little bread added thereto) old Wax, Prunes, and dried Cherries, and divers other things besides. And without doubt this species of little Worms is of the same kind with those that (as *Aristotle* writeth) are the least sort of all Worms, and that they breed in old Wax, and in Wood; and in his fifth Book of the History of living Creatures, Chap. 32. he calleth them *Acari*. A Latine word there is none other for it, unless we think good to call it *Tinea*; because that like as *Garnants* are eaten by the moth; so are the hairs likewise by these Worms, being bred in the hair.

The

*The Causes.*

As Lice and other kind of Vermine have their certain matter out of which they are bred (all kind of Vermine being not generated from all kind of matter) which cannot possibly be known but by experience: even so likewise this kind of small Worms is bred (as we have said) in Wax, Honey, old Cheese, Cherries, and dried Prunes; as also in the hair of the Head, and oftentimes in the Beard. But without doubt they have their original from a certain excrementitious humor, that together with the Aliment of the hair, penetrateth into the said hairs; and there being cherished by the heat of the Head it converteth into little Worms, that afterward sticking unto the hair (for from whence they are generated from thence they seek their nourishment) they corrode the same, so that they fall off piecemeal.

*Signs Diagnostick.*

This Affect is sufficiently manifest of it self. For the hairs are made shorter, and unequal; some of them being more, and some less Curtailed. These little Worms stick in the extremities of the said hairs; and there they from day to day corrode and decurtail them: but whether or no they stick likewise in the midst of the hairs, for this we must Consult the Sight, and take an exact view of the hairs thus affected. The color likewise of the hair (if it be black) is changed; and by reason of those little Worms sticking unto them, it becometh (in some certain places) as it were of the color of Ashes.

*The Prognostick.*

The truth is that this Affect hath in it no danger at all; and yet nevertheless it causeth a very great deformity, and unsightliness, especially in the Beard, by making the hairs unequal; some of them being shorter, and some longer; and the Beard it self seemeth foul, fluttish, and Nasty. This Affect is also hard to be cured.

*The Cure.*

For the Cure hereof there will be need of those Medicaments that Cleanse away these small Worms; and that digest, and discuss the matter from whence they are generated. Neither doth it seem from the purpose, that we purge the whole body, since that these Worms arise from a vitious humor mingled together with the aliment of the hair.

Take of Broom one ounce, Myrrh two drams, Vinegar as much as will suffice; boyl it a little; and let the hair be Cleaned with the straining.

Or, Take Nettle seed pulverized, let it be macerated in Vinegar, and the hairs well wet with the same.

The Decoction likewise of Fenugreek and Scabi-

bious made with Ley is very useful in this Case; and so are also Squills, with the Leaves of Myrtle and Sage boyled in Oyl. Or,

Take Garlick, Centaury the less, equal parts of both; boyl them in Vinegar; and add thereto the Gall of a Bull. Or,

Take the greater Nettle; boyl it in Ley, and wash the Head therewith. Or,

Take Southerwood, Root of Avena, and Wormwood; boyl them in Vinegar and Spring Water, as much of the one as the other, and let the hair be washed with the Decoction thereof.

*Chap. 6. Of the Cleaving of the Hair.*

And sometimes likewise the hairs on the Head, and in the Beard, are cloven and divided; so that those that before were single and but one now seem and appear to be cleft into two. Which Vice of the Hair happeneth without doubt from some sharp humor, cleaving the Hair in the ends of them. But now, since that this Vice breedeth some kind of deformity, it is therefore to be amended. Which is done, if that part which remaineth be anoynted about the ends of them with the Gall of a Bull and be afterwards again washed with the Decoction of the Capillary Herbs, Southerwood, the Reed, and the like.

*Chap. 7. Of hoariness in the Head and Beard.*

For a Man in old age to become grey and hoary in his Head and Beard, is a thing altogether Natural: but yet sometimes nevertheless it to happeneth, that immaturity, and oversoon, hoariness appeareth in some before their old age, yea indeed before they are come to be Men. And furthermore Hoariness cometh on and appeareth leisurely and by degrees.

But yet it is observed, that some persons have suddenly and all on an Instant become white and hoary. And to this purpose, Scaliger in his Exercitation 312. relateth a History of something that happened under Franciscus Gonzaga. This Gonzaga having committed and imprisoned a neer Kinsman of his in a strong Castle, upon suspicion of treachery in him, thereby to reserve him until he were questioned and punished according to his demerits; news was brought him next morning, that his Kinsman was suddenly become all over white and hoary. And the like we read in Lemnius in his second Book, Chap. 2. of Complexions: and in Hadrianus Junius, in his Comment. upon the Hair: In Ludovicus Vives his Scipio's Dream; and in Caelius Rhodiginus, in the third Book of Ancient Reading, Chap. 24. and in the thirteenth Book, Chap. 17. And Cuspinian relateth



Jaeth many Histories of such as suddenly out of fear became gray and hoary; and so doth *Johannes Schenkius* relate the like, in the first Book of his *Observat.* And of this kind of hoariness it is (that cometh immaturally and before its due time) that I am here in this place to treat. For this Affect (in regard that it both depriveth a man of his Natural beauty, and likewise betokeneth that the health is not right, and as it ought to be; it is therefore not without good cause made the subject of the Physicians care and pains. As for that grayness, whiteness, and hoariness that chanceth unto men and women in their old age, and is a Natural ornament of their old age, to endeavor to cover and hide this with fucusses and other artificial paintings, is altogether whorish, and an Argument of a light, wanton, and luxurious mind.

### The Causes.

It is not to be doubted that natural hoariness doth proceed from the change and alteration of the temperament of the body, and the blood that nourisheth the hair. But here we are to enquire how it cometh to pass that there should be sometimes such a change as this in the blood and aliment, in those that are yet in their youth and green years. *Aristotle* (in his fifth Book of the Generation of living Creatures, Chap. 5.) writeth, That the Aliment that produceth these white and hoary hairs (when it is not concocted) doth rot and putrefie, and so becometh a white hoariness; because that the filthy stottiness of them being rotten is almost white. And so he deduceth this hoariness from the defect of Native heat; which when it cannot concoct the humors, these humors being deserted by their natural heat are then the more attempted by an external and adventitious heat, and so they become putrefied; from which putridness they are made white. *Galen* seemeth to follow the opinion of *Aristotle*; when he tells us in his second Book of Temperaments, Chap. 5. That the hairs are made white, because that the aliment whereby they are nourished is as it were the snout of flegm, which in space of time putrefieth. And that which *Aristotle* calleth putridness he termeth *Situs*, and we call it filth, snor, or snivel: this being such a kind of affection as happeneth unto Bread in the Dog daies, which we therefore call finnowed or hoary Bread. And for this cause likewise it is (as he writeth) that men are more apt to grow hoary in their Temples, because that the fore part of the head is (by reason of its driness) more prone to baldness; but the Temples, by reason of their humidity, and consequently upon the generating of snout and filth from the putrefying of the aforelaid humidity, are more apt and prone unto hoariness. The Opinion of *Galen* in this one thing only seemeth to differ from that of *Aristotle*, to wit, That *Aristotle* speaketh only in the general, without making mention of any one par-

ticular humor; whereas *Galen* writes that hoariness proceedeth from the putridness of flegm alone. And here it is altogether more safe, by flegm, to understand any simple crude humor; then flegm properly so called; and that any crudity rather than that putridness only which is so called, may be the cause of hoariness. To wit, (that we may in a word or two propound our opinion touching this very thing in controversie, of which others have so largely discoursed) seeing that the hairs (as we said before) are not generated and nourished from vapors, or excrements elevated in the form and likeness of vapors, but rather from the blood, as all other parts are, it is without all dispute, that the blood that is generated in old age is not so fresh, flourishing, and temperate, as in youth; but that as the body is now hastening toward death, so the blood also that is therein bred is nothing so good as formerly; which is clearly shewn and manifested even by the change and decay of that fresh and lively color of the body, and that witheredness that befalleth men and women in their old age. And therefore we are not to wonder, that (seeing the blood that nourisheth the hair is now become far worse than before) the color of the hair should likewise be changed; neither that the hairs (that retain their own natural conformation and nutrition even until a mans death) should only from some filth and snout (that is wont to happen unto those things that putrefie) suffer any such like thing as that we now speak of. But now that in *Vitiligo* and *Leuca* this color is preternaturally changed, it is doubtless from this, That in the said Affects there is not supplied unto the hair so good an aliment, but such as is full of excrements, and especially flegmatick excrements. But in such as are hoary before their time, in these no doubt there is a fault and something amiss even in the very humors; and if not in the whole body, yet at least in the head and temper of the brain. Neither is it impossible but that these who are thus hoary in their youth or middle age may come to be thus affected, and to suffer what we are now speaking of, either by reason of the Seed, or some disposition in the Testicles; and we have already told you before, that evermore the Seed and the Testicles do make very much in the change of the color of the hair. And again, since that the Passions and Affects of the mind (especially fear and terror) may possibly effect such notable changes in the humors, and that they may likewise greatly affect the brain; it is therefore no wonder that in a short time hoariness should be produced from that change that is made in the humors. For if from a small Cloud, or the Air, or a buttsful Wind blowing upon Trees, the color of their Leaves may be changed, and the Leaves may thereupon wither, (the Tree it self, and other parts thereof remaining safe and untouched; it is not impossible also, but that the color of the hairs (as of the most igno-

noble

noble parts of our body) may likewise be changed from some humor, or spirit suddenly invading and seizing upon them. And this may be also confirmed even by that which *Hollerius* (in his first *Peridiche*) writeth, to wit, That the hairs have suddenly been turned white and hoary by the vapor of Hydrarge.

### Signs Diagnostick.

The change of the color of the hair into whiteness or hoariness is sufficiently manifest of it self; neither is there any need of signs to discover it. And if in the declining age the hair grow hoary, it is no more than what is natural; and this change is made but slowly, as coming by degrees, as age encreaseth. But if this happen before old age, although it be but slowly, yet it is preternatural; but it is much more preternatural, if a man or woman become hoary all on a sudden.

### Prognosticks.

1. That hoariness that is natural (as happening in old age) can no way be amended; as neither likewise can the witheredness in old age: yea indeed it ought not so much as to be attempted by the Physician; since that the hoary head is rather an ornament unto those that are old, than any thing of which they should be ashamed.

2. But that which is preternatural, as it ought to be corrected (in regard that it signifieth some kind of preternatural affect and vicious disposition (in the brain more especially) so it also may be amended; since that if the said vicious disposition be amended, the color of the hair will likewise be changed.

3. That hoariness that is from the *Vitiligo* (a kind of Leprosie) is upon the curing of the said Disease likewise amended.

### The Cure.

The hoariness that is incident unto old age (as we have already told you) cannot any waies be amended; neither indeed ought it to be palliated and hid with any artificial *fucus*; and he that shall attempt any such thing may deservedly be laughed at; touching whom *Martial* (in the fifth Book of his Epigrams) thus:

*Thou seemst, Lentinus, by thy dy'd hairs young again,  
And soon art made a Crow that wast erewhile a Swan.  
Thou canst not all deceive, for Proserpine well knows  
Thy hoary head; and wil discover thy false shew.*

But that hoariness that is caused by *Vitiligo* and *Albus* is taken away upon the removal of the said Disease; and especially if Medicaments that prolong the hair be ministr'd. For then

new hair growing up from the good aliment, those old hoary hairs will be soon abolished.

But if immaturity and before the due time this hoariness threaten, or suddenly invade any person (whether man or woman) the better to preserve from it, and to cure it if present, we must do our best endeavor that good blood may be produced in the whol body (and especially in the head) that may supply unto the hair a good and fit aliment; and withal the vicious humors (if there are any such present) are to be evacuated. Neither ought the particular evacuation of the head (by Sternutories and Emetics) to be omitted. And after this we are to make use of those Medicaments that strengthen the Native heat of the body, and more especially the brain; touching which we have already spoken in their proper place.

The Arabians commend this Confection:

Take of the black *Myrobalans* without their Kernels five ounces; *Ginger*, *Ammi*, (or *Bishop-weed*) of each ten drams: let them be thoroughly moistened with Butter; and then add Sugar of *Penidies* to the quantity of the one half: give often of this Medicament one dram.

### Topicks.

As for what concerneth Topicks, *Galen* indeed (in his first Book of the Composition of Medicaments according to the places, Chap. 3.) propoundeth Medicaments that are hot, and of thin parts, when he had a purpose to discuss and scatter the snotty filth, and to dry up the superfluous humidities in the skin. But unless that there afterward flow thereto such a like aliment that may again generate hair of the Natural color, such Medicaments as these wil avail but little. Others there are therefore that make use only of those Medicaments that dye and make black the hair. In doing of which notwithstanding we are well to heed and weigh what honesty wil allow of; and withal we are to take heed that by no means we bring any hurt unto the Brain. For these Medicaments that make black having most of them an astringent power, and being withal cold, are very apt to produce the Apoplexy, Epilepsie, deep and profound sleep, Catarrhs, and the like Maladies; and this *Galen* tells us he hath seen and observed to befall some certain Women in his time.

But now among these like Medicaments, *Galen* preferreth *Cadmia* or Brass Oar, before all the other; in regard that by this Medicament the hairs are made black, the rottenness and filthy snott is dissolved, and the ill disposition of the head amended. The Oyl of *Costus* is also commended, and so is the Oyl of *Coloquintida*, or bitter Gourd, of *Nightshade*, and of Mustard seed.

Some few hours after the anointing, let the head be washed with a Ley of the ashes of Beans, Nuts, in which Licharge hath been boyled; or with a Ley in which the Pulp of *Coloquintida*

(so

(so much commended by al) hath been boyled. There is likewise commended the Oyl of wild Olives, Myrobalans of al the sorts (which are said to retard and hinder hoariness, both inwardly taken, and outwardly applied) Gals, Acacia, Fenugreek, Henbane seed, Ladanum, the juyce of Walnut shels while they are green, the Leaves of Capars, and likewise the Roots of them, boyled with Milk, mashed, and then in the form of a Cataplasim applied for a nights time; the rind of the holm root boyled unto a softness, and imposed; Sage, and Copperas.

Now these kind of Medicaments are to be continued; and albeit they appear not to do any good at once or twice using, yet nevertheless we are not to desist from the use of them, but we are still to persevere, and continue in the same. Touching these kind of Tinctures, this is likewise to be taken notice of, That if you will have them stable and lasting, it will be very fit that a Lotion of the head be premised, that is made with such a like Decoction that both giveth a beginning unto the Tincture, and that likewise causeth that it continue firm; like as Cloth-Dyers when they intend to dye a piece of black Cloth, they first put upon it a red color with Madder, or a Sky color with Woad. And therefore let the hairs that are to be dyed be first washed with a Ley in which Roch Alum hath been dissolved. And in the choyce of Medicaments, we are likewise to endeavor, that such like Medicaments may be chosen that are no waies unpleasing in their smell, but rather such as are sweet and pleasant.

This following is found to be sure and certain, and by much use approved of.

Take Ley half a pint, boyl in it Litharge of Gold four ounces: In this Decoction let a Sponge be wel wet, and let the hoary hairs be thoroughly moistened with the said Decoction, by the space of a quarter of an hour in a warm place. And then let the head while it is wet be forthwith covered for one hour with a Linen Cloth: and afterwards let the hair and the head be washed with a simple Ley, and not with that which is overstrong: and this is to be done twice a week.

He writeth that the Mercurial Medicament that followeth wil within one month (and often in less time also) make black al the hair.

Take black Myrobalans one ounce, black Raisins two ounces; astringent Wine three pints; boyl them in a double Vessel by a gentle fire, to the consumption of two thirds; then add of the juyce of green Walnut Rinds half a pound, Sumach and Acacia, of each one ounce, Cloves one ounce and half, Musk one scruple: boyl them again in a double Vessel for half a day. Let the hairs be anointed with this Medicament about night, and then let the head be covered with a black wollen cloth: and in the morning following let it be washed with Wine in which black My-

robalans have been boyled. And Avicen writeth that if Cloves be added unto these kind of Medicaments, they wil sufficiently dye the hairs, and prevent the Brains being hurt by the Tincture. Or,

Take Leaves of the Vine, and the Rinds of the Vine Roots, and Parietary: Boyl them in Water, and afterwards add Allum, Galls, and Vitriol; and so mingle them. Or,

Take Green Nuts in the month of June, and bruise them smal; and mingle therewith Allum half a pound; and in a new pot pour in unto them of Oyl three pints; and let them stand digesting twenty daies; let them be afterwards strained, and the head anointed with the Oyl. Or,

Take the Coloquintida Apple; make a hole through it, and take forth the seeds, and fill it up with Oyl of Bayes and the seed of Henbane; let them stand for one whole night, and then let the Oyl be pressed forth, with the which the hair may be anointed. Or,

Take of Ley five measures, Litharge two ounces; Sage leaves two handfuls; boyl them to the consumption of the fourth part, and make a Lotion for the head. Or,

Take Tartar one ounce, Litharge half an ounce, Juyce of Sage as much as wil suffice; mingle them in a Leaden Mortar, and make an Unguent; with which (using it with a Leaden Comb) let the hairs be anointed. But here to add any more Medicaments is not worth the while, in regard that there are many more of them every where extant.

But now these Medicaments that make black the hair are not only made use of for the covering and hiding of hoariness; but in our Germany a black color of the hair is greatly desired and endeavored after by some certain of our noble Virgins; either that they may seem to have somewhat Exotick; strange, and forreign; or else that they may be differenced from the vulgar and Plebeian young Maidens, unto whom the yellow or golden color of the hair is most acceptable, and in most account. And thus every one hath something or other fair in his own eye, and high in his own account, although not so in anothers. And therefore these Virgins seem to me to do just as that Blackmoor did that lived in the Court of a certain German Prince, who often seeing in the Womens Ward a white Virgin, and withal a black Whelp, he would tel the Virgin that she was not fair and beautiful, but rather that the black Whelp was beautiful and fair; and so (as Julius Caesar Scaliger saith)

Black seems most fair  
To those that are.

But more right is the Judgment  
of the other Virgins, that seek and  
endeavor after a yellow or golden

What things  
they are that  
make the hair  
yellow.

Li color



color of the hair. Now this yellow color of the hair may be gained, if the hairs be washed, and likewise their Hair-laces wel wet in that Water or Ley in which the flowers of Broom, or of the yellowish Mullein, of the Citron-color'd Stæchas or Callidony, of Camomile, Citron rind, the Cow-cumber root, and the root of Gentian, have been infused. And likewise Lupines boyled in Water make the hair yellow; and so also doth the Water and Oyl of Honey. And they commonly likewise use (for the Combing of the hair) the Ley that is made of the Ashes of Vine shoots; which will be somewhat more efficacious, if there be infused therein the Leaves of Citrine Stæchas, or of Mullein. But there are more of these like Medicaments every where to be found.

### Chap. 8. Of the Scurfiness, and Dandriff of the Head.

**N**either are we here to pass over those Vices, which indeed happen not unto the hairs; and yet nevertheless they are about the hair and in the Skin that is covered with hair, and wherein it groweth; and of this sort are *Phibiriasis* or the *Lousie Evil*, and *Furfuratio* Scurf and Dandriff, like unto Bran. But having already spoken touching *Phibiriasis*, in the fourth Book of the Diseases of Infants, Chap. 5. It now remaineth that we treat of the *Furfuratio*, or the Dandriff of the Head, Beard, and Eyebrows.

*Scurf and Dandriff.* This *Furfuratio* (which the Greeks call *Psoriasis*, and which is by the Latines called likewise *Porrigo*) is an Affect, wherein when there is any scratching there falleth down out of the Skin of the Head something very like unto Bran; and indeed most usually from the Skin that is under the very hairs themselves; and sometimes also from the Beard, and the Eyebrows.

#### The Causes.

The Cause of this Affect are humors that are serous or wheyish, and also *Ichores* or thin Excrements (not only such as are flegmatick, but such as are Cholerick also) elevated unto the Head together with that humor that yieldeth and suppleth matter unto the hairs; and hence it is that this furfuration or scurfiness doth appear only in those places of the head that have hair upon them: for this matter seeking a passage forth through the Pores of the Skin, the thinner parts of them are disscussed, but the more thick and Clammy parts stick in the Skin & about the hairs, and there they pass into a matter that is like unto Bran, or Scales. The antecedent Causes are all those that may any way generate the serous humors in the Head. But now the matter attracted and drawn unto the Head, in those especially that have a hot Brain.

### Signs Diagnostick.

The Affect it self sufficiently manifesteth and discovereth it self when the Head is Scratched, Rub'd, or Comb'd; for then there fall down certain smal scales resembling Bran.

### The Prognostick.

This Affect hath no danger at all Joyned with it; yea by some it is accounted for a very good Sign of a sound Brain, expelling and driving forth the excrements from it self; and yet nevertheless it causeth some kind of deformity and much trouble.

### The Cure.

The vicious humors if they abound in the body are to be evacuated, and care taken that they may no more be generated.

But unto the Head it self Discussive Medicaments are to be administred. There are some likewise that therewith mingle some certain Astingents, that the part affected may be strengthened, lest that it easily receive the humor that floweth thereunto. But then it is to be feared, lest that the transpiration in the Head be hindred, and the excrements therein contained excite far worse and more grievous Maladies.

And therefore as *Galen* in his first Book of the Composit. of Medicaments according to the places, Chap. 5. teacheth us, the Head is to be washed with the Decoction of Fenugreek, the Juice of Beets, and Nitre. Or else it is to be Cleaned with the Decoction of Melon Seed, the meal of Cicers, Lupines, and Beans. Or else let it be washed with the Decoction of Cicers and Melons, adding thereto a little Vinegar. When the Head is washing, in stead of Soap, bitter Almonds bruised may be made use of.

If the Malady be confirmed, and wil not yield, let the Head be first washed with the Medicaments but just now mentioned; and after this let it be rub'd with a course Cloth, and then anoynted with this following Unguent.

Take *Green Hyssop*, *Ducks fat*, of each half an ounce; the pulp of *Coloquintida*, *Oleum Cherrinum* (or the Oyl of *Wall-flowers*) of each one ounce; *Thapsia* two drams, *Ladanum* two ounces; and make an Unguent.

Or else let the Head be washed with the Decoction of Beets, and the lesser Centaury, adding thereto Vinegar and Honey. Or,

Take *Marshmallow roots*, the Leaves of Beets of each one handful; Pulp of *Coloquintida* half an ounce, *Nitre* two drams; boyl all in a sufficient quantity of Water, to the Consumption of the fourth part; and in the end add of Wine one pint.

After the Washing let the Head be anoynted with the following Unguent.

Take *Copperas*, and the Gall of a Bull, of each one

one dram and half; Nitre and Sulphur, of each two drams; Oyl of Roses two ounces; Mingle them over a gentle fire, and adding thereto a sufficient quantity of Wax, make a soft Unguent.

You may see more of these Medicaments in the place before alleadged out of Galen, and likewise in Paulus Aegineta, and Alexander Tralianus.

### Chap. 9. Of Plica Polonica.

**A**ND lastly, among the Vices of the hair, we must not in silence pass over that which although indeed not known in all places, yet nevertheless may very well be accounted the chief of them all. It is called *Plica*, to wit, because that in it the hairs are wholly entangled one within another; and by the Polonians *Gwodzić*, that is, a Club; and by the *Roxolani* it is termed *Koltun*, which signifieth a little Stake or (small Post; whereupon it is also by some called *Helotis*. Others call it the Disease of the Locks; the Germans *Wichelzopffe*, because they superstitiously conceived, that such like Locks of hair were entwisted by Infants dying unbaptized (for these by the Ancients were called *Wicheln*) as likewise, *Marenflecht*, *Marenwirchung*, *Marenlocht*, *Schrotelinszopffe*, *Indlezopffe*, because they were thought to be knit and twisted by some *Incubus* in the likenels of a Jew.

This Disease is very familiar, and as it were Epidemical, especially unto the Polonians; inasmuch that Necessity enforceth them to ask the advice, and to implore the assistance of the Physicians of Padua. I had rather therefore give you the History hereof, in the very words of these Physicians, then in mine own. Now therefore thus writeth D. Laurentius Starnigelius (Rector of the University of Zamoscium, and Professor of Rhetoric) unto the Physicians Professors of the University of Padua, the last day of October, in the year 1599.

Excellent and Worthy Sirs, our most dear and greatly to be respected Friends;

**I**N regard of that neer and Intimate acquaintance that we gained (during our Converse and abode in the lowest Sarmatia) with you most Excellent and Noble Doctors, by reason of that common bond and tie which the best of Arts had knit between us and your Excellencies; I the Rector of the lately erected University at Zamoscium held my self bound to write unto you (my Noble and ever honored Friends, famous indeed and renowned, not only by the antiquity and eminency of the most Noble University of Padua, but also far more enobled and dignified by your Learning and Præfise. The Cause of this my

writing unto you was given me by the Novelty of a Disease among us, and the extreme difficulty of Curing thereof. My request is, that you the most Eminent Professors of the University of Padua would both please to read this my Epistle, according to your wonted Candor and Courtesie; and likewise when you have read the same, that you would vouchsafe friendly to write back unto me your Advice and Judgment; of what nature and quality you conceive the Disease to be, what Precepts you think fit to be given touching the same, & what kind of Medicaments you Judge most expedient for the removing of the same. The Case stands thus: Betwixt Hungaria and Pocutium (a Province of the Kingdom of Polonia) which are distinguished the one from the other by Mountains, out of which there break forth divers Rivers, it so happened, that very many both Men and Women had one or two Locks growing forth on their Heads, entwisted and infolded within themselves inwardly, and entangled together with the hairs nigh unto them, the Lock hereby becoming exceeding very thick: and then indeed it was nothing at all troublesome. But now this same Disease hath begun to Creep further, and sleeth up and down throughout the whole Kingdom of Polonia; to the great disquiet and torment of all sorts of People. It infringeth the Bones; looseth the Limbs; infesteth the Vertebrae of the Limbs; maketh the members round like a Globe, and writeth them back; it causeth them that are affected therewith to buncbout; it poureth forth Lice, and so filleth the Head with fresh supplies of these said Lice following one after the other; that it can by no means be freed of them. If these Entangled Locks be shaven off, that humor and the poison thereof sheds forth into the body, and then (as we wrote before) extremely tortureth the persons thus affected; it disquieteth and troubleth the Head, Feet, Hands, all the Limbs, all the Joints, and in a word, all the parts of the body. And it is found by experience, that such as have shaven off these bundles of hairs so closely entwisted within themselves, that these have soon after been taken in their Eyes; or else have been most grievously tortured with Defluxions unto the other parts of the body. If we attempt to Cure the Party by the usual purging Medicaments the affected Person is the worse for them; and the tormenting pain rageth so much the more; because that the said purgation is not able to master and expel the Noxious offensive humors, but only stirr them abroad, and thereby scattereth and disperseth them throughout the whole body: for (after purging) those that are afflicted with this Pest are so exceedingly tormented with a burning pain of all their Members, that nothing can possibly be added unto the sharpness & bitterness of the Torture. Women for the most part are taken herewith; and likewise those men that are inclined unto the French Disease, as also the Children begotten by them.

them that are infected with the said Disease: and those likewise who by Repercussive Medicaments have driven back and repressed the Porrigo of the head (which the vulgar call Tinea:) and moreover, such Women as in the time of their Monthly Courses are not sufficiently purged. Of which Women some of them there have been that in their young and most vigorous age, having had no more than a shew of their Courses, but withal an extraordinary flux of blood from the Nose, these in their declining age (this flux at the Nose ceasing) have fallen into this very disease of the intangled Locks. Some there have been (though very few) who having been for some yeers tormented and afflicted with this kind of Disease, and not at all shaven their heads; and having undergone all the vexation, nastiness, and filthy deformity of this disease (not without extraordinary great trouble, and a most intollerable nauseousness) have at length recovered, upon the falling off of these virulent intangled Locks; but yet nevertheless the greatest part of them perished. Many kinds of Medicaments have been sought for, and made trial of, but as yet there hath been found none that would effect the Cure. The force likewise and nature of the Disease, and the cause thereof, have been sought for; but as yet there indeed appeareth nothing of certainty, touching what we have sought for. The Country Boors give out that they have found great relief by carrying tied about them an Urchin pulled in pieces: and for the total abolition of the said afflict, they make themselves a meat of the said Urchin is self; but yet we find that even in this there is not any thing much available. They furthermore provide themselves of a Decoction made of the Leaver of Bears breech, with the which when they wash their heads, the locks we mentioned before break forth, and withal great store of Lice. This Afflict communicates with that fuliginous and sooty exhalation out of which the hairs are bred; and it seemeth to have some affinity with the afflict Tinea; and by it excruciating and racking the bones with the French pox; by the great abundance of Lice, with the Pthiriasis; by the pain of the Joints, with the Gout Arthriticus; and by the miserable contraction of the Members that it causeth, it seems to have some near alliance with the Spasm. That I may add no more (most worthy and renowned Professors) your Excellencies well skill'd, and most expert in this kind of Art, will easily collect, how necessary this deliberation is, and with how great a benefit you shall oblige unto you the whole most wretched Kingdom of Polonia, when by your deep Wisdoms and Skill you shall have discovered and found out a present Remedy for this kind of Pestilent Malady, with the which it is generally vexed and disquieted in a most violent manner; and when you have found out an expedient Remedy, if you then please to communicate it unto us by your Letters.

Many there have been who (as the first Authors and Inventors of various Medicines) live yet even unto this very day in perpetual praise; the glory and renown of this Medicine found out by your excellent and magnifick Wisdoms, shall be properly your own, shall make you famous, and shall for ever flourish in succeeding ages. I expect from you your most friendly and courteous Answer: but if I have not sufficiently (neither yet in fit and proper words, and such as were requisite) expressed the quality and condition of this Disease, I desire of your Excellencies, that you would herein excuse me, a man wholly conversant in another kind of Art. I have presented you with a certain Adumbration of this Disease, and in a manner shadowed forth unto you this Malady; the more interior Nature and hidden parts thereof your excellent Wisdoms by the sharp and quick sight of your knowledge will easily search into, and contemplate. I bid your Excellencies heartily farewell: From Zamolcium, this last day of the month of October, in the Year one thousand five hundred ninety nine.

And yet notwithstanding there are others that tell us how that this Disease is very common and familiar even in other Regions also. For in the Observations of Schenckius we may likewise see, that this Disease was known also unto the Brigoi, and Alsaians. For thus Schenckius writeth in the first Book of his Medicinal Observations, Observat. 13. There is (saith he) with us at this day to be observed a certain most horrid, uncombed, and most intricate kind of hairie Tufts, both in the head and beard, no whit strange and unusual unto ours; but altogether unknown unto the Ancient Physicians of former times, in what Age soever they lived: with which such as are afflicted, you may see them have hanging down (from the rest of the hair of their head and beard) even unto the shoulders, breast, and sometimes also even unto the very Navel, very long tufts and bushes of hair, wonderfully intricate, oftentimes a finger thick, exceeding dreadful to look upon, and much resembling the Gorgons head. Which tufts of hair they suffer to grow in a sloven-like and regardless fashion, for some superstitious ends inducing them thereunto; neither will they at all suffer it to be cut, neither at any time to be parted and severed with the Comb, being altogether persuaded that the most grievous Fomenters of the diseases of the head (that is to say, the matter of the Apoplexy, Palsie, Madnesse, and especially the pertinacious Cephalalgie, and the like Diseases) are wholly, or at least in great part consumed in nourishing these tufts of hairs: And thus bring lead either by Superstition, or the long and exact observation of other men, they will admit of any thing, rather than the hewing or cutting short of these bushy locks of hair, as a thing altogether ominous and deadly; and having



ing made their *Essayer* both of Experiment, and History, they stiffly maintain their own Opinion. But those of them that would be accounted more neat and spruce bide these their deformed tufts of hair (those of their heads within their hats, but those of their beards rolled up together under something they purposely wear upon their breasts) that so they may not be seen. But there are likewise others of them, who (although it be even in the publique Assemblies) cannot possibly conceal these monstrous and deformed bushes of matted and intangled hair, if they would never so fain; neither would they, if they could. So that it is a thing so well settled and resolved on (without the least doubt or scruple) in the minds both of those that wear these horrid and strange intangled locks, and likewise of all those that behold them, that even in their publique Assemblies, without any the least shame or disgrace, and as a thing altogether necessary for the sustaining of life, they expose them to open view. And some certain of them there are (as we have already told you) that during their whole life do in this manner nourish and cherish these their ugly locks, hoping that thereby they may possibly be preserved from all other dangerous and difficult diseases that continually threaten them. The vulgar likewise, if they chance to light into the company of any thus affected, they then presently suspect them to be diseased with some hidden, undiscernable, and some one or other difficult Malady of the head. In which thing whether their Superstition convince their Experience, or their Experience exceed and surpass their Superstition, I will not at present trouble my self to judge thereof. Only this indeed I conceive fit to tell you, That as I incline very much unto the vulgar Opinion; so (that I may conceal nothing) I think also, that the Seminary of these kind of Diseases is not from thence so much argued as nourished, and that by this means it may be prevented that they invade not; as we are likewise further taught by the received Opinion of Physicians, touching the Cause of the generation of Hair, the Events, and the Cures; there accruing also (for our further assurance) the common and constant attestation of the vulgar, and which at this day passeth (as from hand to hand) among them. I have not as yet found that this vice of the hair is sufficiently known unto other the Europeans; neither is it known in the most parts of Germany: but unto all the Brisgoi, Alsacians, Dutch, and in many Tracts near unto the River Rhine, it is in a manner Epidemical; and generally well known likewise unto the people where I live. I my self knew here above thirty Citizens (of whom some are even yet living) that were famous and remarkable for this kind of hair. The common people call it *Marenfletcht*, *Marenwirkung*, and *Schortlinzopff*, as if we should say, The contortions or writhings of the hairs, on the locks,

and bairy tufts of the Incubi; for they conceit that the Incubi and Fauni (as the Ancients called them) draw forth these hairs in the night time by sucking them. Others there are that name them *Marenlock*, that is to say, the locks and tufts of Swine, because they now and then observe some long tufts (like unto the former) growing out of the neck of these Swine, and hanging down very low.

As for Histories, there are two that in special he reckoneth up, the one out of *Johan. Stadlerus*, a Physician; the other out of *Moccius*; and both of them he relateth in their own words. The first is this. Thou bringest unto my remembrance that noble person *Casparus* of *Horslein*, Brother unto the Commendator *Sigismund* in *Alsacia*, and Provincial in *Burgundy*, lately deceased; whom when the Commendator on a time sharply reprehended by reason of his uncombed, writhed, and intangled beard, which (horrid and frightful as it was) he wore before him; and withal threatening to remove him from his Table (a man of about fifty years of age) unless he would cut it off; he then answered, that he would more willingly be deprived of his Diet, and freely depart the Court, rather than want his intangled and altogether *Gorgonean* Beard. This happened in the year of Christ 1564. when from *Friburg* I went to *Alschusa* for fear of the Plague. Thus much out of *Stadlerus*.

The other History is thus related: Of late (saith *Moccius*) one rashly cutting off these Locks of an old woman, she died within the space of three daies. For they cry up this as a thing very fatal, even unto such oftentimes as for want of good advice have frivolously been hurt: although there are likewise some that tell us another tale. For we know the man who was well acquainted with a certain Countess, that having such a monstrous head of hair would often cause it to be cut, even unto the neck. This out of *Moccius*; and thus far *Schenckius*.

I have heard from a certain Captain of Horse, that this Malady is likewise not unknown unto the Hungarians; and that in Hungary not only Men, but even the Horses also are subject unto this kind of Disease; and that he himself brought out of Hungary as far as *Dresda* a Horse that had such a Plica or intangled Lock of Hair, hanging down unto the very feet.

Unto the aforesaid Epistle of the Rector of the University of *Zamoscium*, *Hercules Saxonia* answereth in a peculiar Book, which he entitleth, *de Plica*, or, of the monstrous intangled and writhed Hair. *Johannes Thomas Mindaus* hath likewise published the Consultation they had at *Padua* (touching this sad Affect) on the 15. of the Calends of January, in the year 1599. and he inscribeth it, *de Helotide*. *Rodericus a Fousced* hath published likewise a Consultation touching this same Disease; the which

we find in the first Tome of his Consultations, Consult. 1. Al which are to be seen in these beforementioned Authors. But now whether or no the Polonians received any considerable benefit by these Consultations of the Italians, I leave it unto themselves to judge. I think that to be a very Ingenuous Confession, which that most eminent and famous man Dr. *Johannes Prevotius*, principal Professor of Physick in the University of *Padua* maketh in that Letter of Advice and Counsel which he wrote unto the Illustrious and most generous Lord, *Nicolaus Sapieha* chief Standard-bearer unto the great Dukedom of *Lithuania*, and Earl of *Coden*, &c. (I shal anon give you the whol Letter at large) where he thus writeth: *The Nature of this poyson* (saith he) *is altogether unknown; so that (as it seems to me) it was truly spoken by that illustrious person, who said in my hearing, that the Boors inhabiting within his Territories had found out more of the original of this Plica, the progress and the Cure thereof, than any of those Authors that had written concerning it, of which there hath been never a one of them that as yet hath had the fortune to restore unto perfect health any one that hath been afflicted with the said Plica.* The Physick Professors of *Padua* have indeed made trial there of very many Remedies, but al to no purpose. The same aforesaid Noble person (Count of *Coden*) himself told me, that a certain *Padua* Physician induced thereunto (as it were) by the signature & shape of the Disease (for they that are affected with the true and perfect *Plica* seem in a manner to have Serpents hanging down from their heads, and as it were the head of the Monster *Gorgon*) prescribed him some *Vipers* to eat, but without any success at al. And that another of them had provided him a *Philothrum* Oyntment to use instead of the usual *Ley*, perswading him to condescend unto the cutting off of his hair, promising him an artificial covering for his head; but that being advised to the contrary by a German (a student in Physick) unto whom this Disease was not altogether unknown, and one who well understood the danger that was like to follow upon the rooting out al his hair, he therefore refused it. But although I dare not arrogate unto my self a perfect knowledg of this Disease; and albeit that in no case we cannot attain unto the perfect and exact knowledg of Diseases that depend upon an occult and secret Cause; yet nevertheless what I know touching the Nature of this Disease (by means of my converse with the Noble Earl before mentioned, who was afflicted therewith) and what I conceive touching the Cause thereof, I wil here briefly acquaint you with, that in so doing I may give a further occasion and encouragement unto such as live in those Regions where this Disease is commonly and familiarly known, to publish what is come to their knowledg touching this Disease.

It seems not to me to be any new Disease. For although it hath hitherto been unknown unto the people of *Italy*, and most of the European Regions; yet nevertheless, I see no reason at al, why it should not be common and frequent in *Polonia* many Ages past as well as now; since that the causes that produce the same at this day might then be present as well as now; only that there were then wanting Physicians that might inquire into, and acquaint us with what they knew touching the Nature of this Disease.

Now as for the Nature of it, we are first to take notice of this; to wit, that this Disease (as for what concerns the name thereof) is known indeed from the intricateness and intangling of the hairs: yet notwithstanding that the said *Plica* is only somewhat that is Critical as it were, arising from the expulsion of the vitious matter out of the body; and that the said *Plica* bringeth no danger at al along with it unto the affected person, who oftentimes bears it about with him al his whol life, without any the least damage. But that which most of al threateneth danger unto the diseased party is that vitious humor which yet sticking fast in the body exciseth those most grievous symptoms that have been before recounted in the History of this Disease; which cease al of them afterward, so soon as the matter is thrust forth unto the hair.

And moreover, this is further to be added unto the History, That in such as are thus affected, especially if the Disease proceed unto the height, not only the hairs are vitiated, but the nails also, and more especially in the feet, but most of al in the great Toes thereof, which become rough, long, and black, like unto the horn of a Goat; and this I observed in the afore mentioned noble Lord *Nicolaus Sapieha*; and I have heard that the very same hath also befallen unto others.

But now this Vice is not without cause referred unto and reckoned among Diseases, in regard that the hairs are not wholly to be excluded out of the number of the parts. And it is to be referred unto the Diseases of Conformation, seeing that the hairs neither retain that figure that they ought naturally to have, neither do they every of them appear single and severed, as they should, but are variously complicated among themselves, and entwisted one within the other, so that of many hairs there is made one long, thick, intangled, and frightful lock. And yet notwithstanding that the Dis temper of the hairs is likewise changed cannot be denied, in regard that there floweth unto them a preternatural humor, and such like hairs as these when they are cut pour forth blood.

As touching the Causes thereof, in the first place, these things that are commonly believed and by tradition pass from hand to hand, touching the paines that is taken by the *Incubi*, Infants not baptized; and other Spirits besides; in the weaving of the long, ugly and frightful Locks there

there is none but may easily perceive that they are meerly fabulous and superstitious. But that this vice of the hair, as well as many other Diseases, may sometimes proceed from Witchcraft and Inchantment, appeareth even by the Observation of *Christophorus Rumbaumus*, Doctor and Professor of Physick, and my fellow Citizen, which *Hercules Saxonia* reporteth to be Extant in the Observations of *Johannes Schenckius* the Elder, in the seventh Book, in these very words of *Rumbaumus*. In the year 1590. while I was a long time bestowing my pains (though all in vain) in the Cure of a *Mans Wife* (who out of the Lees of Beer artificially desilled Brandy Wine at *Ucratissavia*) being newly brought to bed and by reason of a great and sudden affrightment upon occasion of a lamentable fire burning the next adjoining houses, taken with an Inflammation of the Lungs, upon the retention of her Courses, Secundine, and what should afterward have come from her, and this Inflammation (through her own carelesness) terminating in an Impostume of the Lungs, and the Consumption: a certain Emperick (an old Woman) came unto her, and offering her pains promised present help: Which she would by no means admit of: Whereupon the Emperick old Woman growing much enraged, & uttering many threatening words, she causeth her to be shut out of doors; and then presently (as she was wont) she fals a washing and Cleansing away the filth of her Head (having first Combed, plaited, and dressed up her hair somewhat long, as her custom was) with warm ordinary Spring water. But upon the very first pouring on of the water all the Locks of one side of the Head, as it were all besmeared with Birdlime, become on a sudden so intricate and intangled, that afterward (as long as she lived) they could by no means, wit, or device, be extricated and severed as formerly; but continued thus in long entangled Locks, very frightful to behold, even unto her dying day. And this we conceive to be wrought meerly by Witchcraft.

But I think this to be very rare; and that this Vice proceedeth from some internal Cause we are taught even by this, that in those places Bruis likewise are taken with this affect. But now what kind of humor that is, we shall find it very difficult to explain. Very many there are (and indeed the most) who refer the Cause of this malady unto a certain viscid and slimy humor. But these fall short of the truth. For in many bodies, and many Regions likewise, these viscid Glummy humors are generated, which yet notwithstanding produce no such Disease. For neither may these pains of the Limbs, Convulsions, and other Symptoms, be referred only unto a viscid humor; neither can any reason be rendered, why this matter should be thrust forth only unto the hairs, and unto no other parts. But what the Nature of this humor is, the nourishing of our body and the generating of other Diseases, may in some

measure instruct us. For although all the parts are nourished by the blood; yet nevertheless, as divers Plants do from the same Earth attract (each one of them) that Aliment that is proper and familiar unto them, as *Hippocrates* testifieth; in his Book de *Natur. human.* Text. 31. even so likewise out of the same Mass of blood contained in the Veins, every one of the parts attracteth unto it self that Nutriment that is most familiar unto it. It happeneth moreover that if the blood be less pure, that excrementitious aliment is carried more unto one part then unto another. And this is plainly to be seen even in the Joynt-Gout (*Arthritidis*) where that same serous wheyish matter, salt, and tartareous (or call it how you please) is carried more unto the Joynts, than to the fleshy parts. A proof of this we have likewise from the stone *Osteocolla* (which is very sicily administred in the fractures of the Bones) where we find that the very bones themselves attract unto them the said Stone; so that it is by experience found, that from the overmuch use thereof there have grown forth Callous substances extraordinary great, and unsightly: of which see *Gulielmus Fabricius*, in his first Century, and Observat. 91. And therefore I am of Opinion, that in those places where this Disease is Epidemical, the fault is in the Genius of the place, and in the Waters, which flow down from the mountains of *Hungary* into *Polonia*; (and in *Bisgoia*, if this Disease be likewise familiar in that Region, from the *Alps*;) which supplieth unto the hair an abundant Nutriment; but unto all other parts of the body such an aliment as is altogether unuseful, and which is worse, very hurtful; which when Nature expelleth unto the hairs, the rest of the body is thereby freed from all other grief whatsoever, and the hairs alone become vitious. And I am the more confirmed in this my Opinion by what was related unto me by the aforelaid Illustrious Lord Count *Nicolaus Sapieba*; that he knew a Boor in *Polonia*, that by bathing Cured such as were troubled with this Disease: by the use of which the first seven daies the sick persons became very hairy all their body over, the hairs breaking forth in all parts; which (upon continuing the use of the same Bath for seven daies more) fell off again, and so the Diseased persons recovered their health. And indeed that some Waters have in them an extraordinary and admirable virtues will every where appear unto us in the Writers of Naturall History. So in the *Alpes*, *Styria*, and *Carinthia*, by the fault of the Water, the Tumors, *Bronchocele* and *Struma* (we call this last, being a swelling in the Neck, the Kings Evil; the former being a swelling in the throat) are Natural and as it were bred together with the Inhabitants, the vitious matter being thrust forth unto the Glandules in the Neck, and into no other places.

And yet nevertheless, I would not have it thought that I do hereby altogether exclude the



Air, which it must be confessed hath likewise a very great power in altering our bodies; and it causeth that in these, or those Regions and bodies, these or those humors are generated. Although it be likewise true that the said Air hath not this power from it self, but that it receiveth the same from those vapors that are lift up and raised from the Waters, and out of the Earth which the Water washeth upon, and passeth through. And for this reason it is, that this Malady is not general and Universal throughout the whole Kingdom of *Polonia*, but only familiar unto some certain places thereof, in regard that it alwaies spreadeth and rageth there, and yet is not from thence dispersed into any other Regions; and this Disease *Hercules Saxonia* acknowledgeth to be Endemick; but he wil by no means have it to be Epidemick; as we may see in the tenth Book of his Practice of Physick, and Chap. 7. of *Plica*. But we have already told you (in the second Book of our Institutions, Part 1. Chap. 11.) that he did not well understand, and therefore could not rightly describe unto us the Nature of a Disease Epidemick and Endemick.

Now the said Matter is carried unto the hair, not (as some would have it) in the form of vapors, but together with the blood it self; which as it is of all other parts, so it is likewise the Nourishment of the hairs, as we told above in the tenth Chapter. Which appeareth even from hence, that the hairs in the *Plica*, if at any time they be cut, they yield forth blood. That (notwithstanding what hath been said) there are now and then some certain persons even in the neer neighboring Regions that are likewise troubled with this Disease, this may possibly proceed, either from the natural neer allied Genius of that place; or else from the Parents. For look as Arthritical persons beget the like; so also it is not impossible, but that those which are affected with the *Plica* may transfuse into their Issue a vicious disposition unto the generating of the same Disease; and Experience teacheth us the truth of this. The Son of the aforesaid Lord, Count *Sapieha*, when he was six years of age, had at the first some few intangled Locks of hair among the hairs on his head; and the same hath also happened unto others. I knew a Souldier (an old man) that had a *Plica* in the binder part of his Head; who being demanded as touching the Cause of the Disease (for he was a German and born at *Thuringia*) replied, that this Disease was hereditary unto him; for his Mother (as he said) had seven of these *Plica's*, two Ells long, all her life long, even unto her dying day. The same Man related this likewise for a truth, that being a Souldier in *Hungary*, and taken prisoner by the Turks, his Master (according to the custom of that Nation) caused all his hair, and withall this *Plica* of his, to be cut off; and that he thereupon became blind; but that having by an Interpreter acquaint-

ted his Master with the Cause of this his blindness, and obtained of him that his hair might be suffered to grow forth again, he afterward recovered his sight.

### Signs Diagnostick.

There is no need at all, that we add any more Signs; since that there wil appear signs sufficient from the History of this Disease before recited. But that we may in few words give you the Causes of those things that happen in this Disease; in the first place, if that said matter of this Disease (whether it be malignant, or whether it be simply unfit for the nourishing of all other the parts besides the hairs) be abundantly heaped up in the Veins, it is then by Nature (unto whom it is burthenom) thrust forth from the more Noble unto the Exterior parts; whereupon the bones are much damnified and diminished, the Joynts loosened, the Head, Feet, and Hands, and all the Limbs and Joynts infested with pain, Convulsions excited, and the Members contracted. But if Nature be so strong as to get the Mastery, she at length thrusteth forth the said matter unto the hairs, and more especially those of the Head, with the which this Matter hath a very neer alliance (as in such as are Arthritical; the Cause of the Gout *Arisbritis* hath with the Joynts) whereupon Dandrif like unto Bran and Lice are abundantly generated in the Head, and from the overgreat store and luxuriancy of the Matter the very hairs are Complicated and intangled within themselves, so that they cannot be separated by any Art or Labor; and being Cut they likewise pour forth Blood.

### Prognosticks.

1. This very Malady, unless the matter be thrust forth unto the hair, is sufficiently dangerous; so that there are most grievous pains and Symptoms excited, almost in all the parts wherunto the matter is thrust forth, as we told you but even now.

2. But if Nature doing rightly as she should, and as it were by a *Crisis* thrust forth this matter unto the hairs, then indeed this Vice of the hair that we are treating of is excited, but the Party is altogether preserved free from other Maladies; since that Nature is wont to thrust forth unto the hair whatsoever there remaineth of this like vicious matter in the body; and many with such like *Plica's* live very healthfull all their life long.

3. But if such *Plica's* be at any time rashly cut off, blindness, and other most grievous Maladies are from thence excited. Neither is this a Fable; but experience it self often teacheth us the truth hereof; as the Example even of that Souldier of whom we made mention before in the Causes may sufficiently instruct us. And this happeneth not (as many conjecture) because that these *Plica's* being Cut, the Head is thereby exposed

unto

unto the cold Air, (for this may easily be prevented by a hat, or some other covering put upon it) but because the place into which Nature was wont to thrust forth the vicious humors is taken away, and a passage forth denied unto the matter, and the Evacuation thereof hindered. And the same happeneth here, as in old inveterate Ulcers: for these may not be healed without extream danger, unless the body be first well purged and cleansed; and like as issues also, after they have for a while been permitted to run, are not without much peril to be stoppt.

4. If nevertheless there be no more of this vicious matter left remaining in the body, then after some time those very *Plica* fall off of their own accord; and therefore also there remaining now no more of the said matter in the body, which I confess is a thing very hard to know, it may be safe enough (without any danger at all) to cut off these *Plica* with the rest of the hair.

### The Cure.

I conceive that the perfect Cure of this Disease is altogether unknown. Which without doubt proceedeth from this, that in those places of *Polonia* where this disease is Epidemical, there have hitherto lived but very few Physicians that were able to compose an artificial Method out of those things they might come so know from the vulgar, touching this Disease, and the Cure thereof.

This in the first place is certain, That Purgations and letting blood avail but little in this Disease; yea, that they are oftentimes hurtful. For so the Rector of the University of *Zamoscium* writeth unto the Physicians of *Padua*: If we attempt (saith he) to cure this Disease with the usual Purgations, it maketh it but so much the worse, and to rage so much the more; in regard that the Purgation is not able to overcome and master the noxious humors, but only to disperse them throughout the whole body when they are thus moved: for those that are affected with this pestilent Disease, do thereupon burn with so great a pain of all their Members, that nothing more sharp can possibly be added unto the sharpness and bitterness of their torments. And the same is confirmed by *Hercules Saxonia*, who in the place alleadged, out of the Epistle of a certain noble Matron, a *Polonian* (who was troubled with this Disease) writeth, That the said Matron upon the opening of a Vein in the Arm, was immediately taken with most extream and intollerable pains in the same Arm, together with an oedematous Tumor: and likewise that for the very same reason, a Vein being opened in the Feet, there were most sharp and bitter pains excited in both her Thighs, as low as the Ankles. The same *Hercules Saxonia* in the same place, writeth, That a certain famous and eminent Captain, a *Polonian* (*Joachimus de Ociesno* by name) told him, that he had seen many that were blind, and

some that were lame, and others otherwise affected, who having had Purgations administered unto them in the beginning, fell into these Affections. And the very same happeneth also in the Scurvy; the Symptoms whereof are for the most part exasperated by the use of Purgers.

It will therefore be the safest course (still taking Experience for our Guide) to use the utmost of our endeavor that the said vicious matter may with all possible speed be drawn forth unto the hairs, whither it is now tending. In which it will be likewise our safest course again to follow the guidance of Experience; by which it manifestly appeareth, that those Lotions that are made of the Plant we commonly call *Bears-brech*, is very available and successful in this case.

I confess indeed it is altogether unknown unto me, whether the same may be performed by inward Medicaments. But yet the very mentioning of *Bears-brech* brings unto my remembrance a certain Drink (no doubt at the first brought thither out of *Polonia*) that was much in use in my Country, in the City *Uratistavia*, and it is made of *Bears-brech*: the vulgar call it by the common *Polonian* name *Barsicz*, or as the *Getmans* pronounce it *Barkich*; which those that are Feaverish, and especially the great Drinkers after their excessive Cups the day before, use in their Broths, and in their ordinary Drink, to assuage their thirst. Now it is made in this manner. The Leaves of *Bears-brech* dried are boyled in a sufficient quantity of Water; that the Decoction may get only a yellow, and not a purple color. Unto the Decoction there is added a little Leaven, or Bread twice baked, made of the Powder of *Bears-brech*, with the four Leaven of fine white Bread, and then for some certain daies set in a warm place, where it gets a boyling heat and fermentation, until such time as it hath contracted a taste somewhat tart and sour. But now whether or no this kind of Drink hath a power of doing any thing toward the expulsion of the matter in this Disease, we are to consult with Experience. And it is their part who live in those places to make publick those Medicaments that use hath taught them to be fit and profitable, that so all their Experiences being consert'd together, there may at the length be composed a Method of Curing this Disease.

But in regard that the *Plica* hath some symptoms common with the Scurvy (such as are the pains of the Limbs, Cramps, and the like) and that the aforesaid illustrious Count, *Nicolaus Sapieba*, was affected with both those Diseases, I think it not amiss therefore here to place the History of his Disease; which will add some light unto what we but even now spake touching the *Plica*; and to what we have likewise before, in the third Book of our Practice, written concerning the Scurvy.

*The History of the Disease of that Generous and Illustrious Lord, Count Nicolaus Sapieha, Earl of Couden, Chief Standard-bearer of the great Dukedom of Lituania, &c.*

This Illustrious Count (without doubt) contracted this his Disease of the *Plica*, in his own Country, from the same common cause from whence the vulgar have it: but as for the Scurvy, he got it from the many Errors by him committed in his Dyer, during his various & troublesome Journeys throughout almost all Europe, and from the Quartan Fever that followed upon the same. For when in the heat of Summer (as himself related the story unto me) he had travelled over the Pyrenean Mountains, out of France into Spain; and in this his Journey had drunk good store of Wine (out of bladders) that was corrupt, and full of Vermin, the Autumn following in Spain he fell into a Quartan Ague. The long continuance

whereof having made him impatient, and being quite tired out with the tediousness of a Methodical Cure, he committed himself unto a certain Soldier for Cure: who took some certain Cups of the strongest Spanish Wine; and into the same he put the powder of all sorts of sweet Spices; and this Wine he gave him to drink, not only to satiety, but even to Ebriety, until he had made him almost drunk; by which he kindled within him a continual Fever, which indeed lasted not long, and quite took away the Quartan; but yet nevertheless imprinted such a Dyscrasie in his Bowels, and humors, that shortly after the Scurvy followed thereupon. With which being grievously afflicted at home in his own Country, and yet notwithstanding so that he could not well tell what the disease was, he made a Journey unto Padua, and there he committed himself for Cure unto the most Eminent Physicians of that University. But yet he recovered not that health and strength that he had expected, and hoped for; and thereupon he is sent back again home into his own Country, with this following *Consilium*, which we may term, a Direction, Advice, or Counsel.

*The Advice of that most Famous and Eminent Doctor, Johannes Prevotius, Chief Professor of Physick in the University of Padua.*

**T**OUCHING the manifold Diseases that this Noble person lieth under, it is neither my purpose at large to treat of them (since that I am not ignorant that they have already been discoursed of by some of the most Eminent Physicians in their long and learned Disputes:) neither indeed will either the state and condition of mine own health (not yet sufficiently confirmed) permit the same; nor likewise the health and safety so much desired by this illustrious person, for whom I conceive that help and assistance is far more requisite than words and tedious Discourses. I shall therefore with all brevity state and determine the whole case, and ingeniously declare unto you my Opinion touching the same; not that I may interpose my Judgment in opposition unto the Opinion of these grave and learned men; but that I may in some measure gratifie the request of this eminent person, and (if I may any waies possibly be serviceable unto him in procuring his health) that I may not in the least be wanting in the discharge of the Duty and Office of a Christian. It seemeth therefore unto me, that this illustrious Lord is disaffected with a twofold kind of Diseases; the one of them most manifest, depending upon Causes that are commonly known and confessed: the other occult and secret, the Causes whereof are as yet obscure; neither seem they hitherto to be sufficiently expressed by any. There is manifestly appearing a Catarrh of matter that is thick, tenacious, white, oftentimes insipid and tasteless (and very rarely sharp and biting) flowing and falling down unto the parts of the mouth, and sometimes also unto the stomach. There is moreover an extraordinary pain of the lower belly, returning afresh after long intervals and Cessations, with an striction and costiveness of the belly, and a certain grievous and painful sense of extension and stretching about the Region of the Navel, of the Hypochondria, especially the left, and sometimes also of the Loynes; which indeed is wont in great part to cease upon the plentiful Evacuation of the Wind, and a strotty kind of Excrement that comes from him. To these we may add the Nephritick distemper, and want of rest and sleep; this latter being indeed very familiar and frequent with him, for he usually passeth many whole nights together without sleep; and the former, to wit, the distemper of the Kidneys, hath now of a long time sorely troubled him, with a redness and heat of his Urine, and excretion of sand and gravel with his water. The causes of all which Maladies it is most manifest that they are derived from the evil constitution of the internal Bowels, and the excrements of several sorts from thence arising. For the Brain being overmoist (not without much weakness of the innate heat, contracted by reason of a great wound he received in it at Paris) engendereth much flegm, there being added unto all this, in a special manner, the consent of the natural bowels; sometimes the Liver by its heat elevating many vapors; and sometimes the stomach naturally cold, and affected likewise with an Adventitious humidity, corrupting with a more crude



crude juyce the aliment of the whol body, and filling the head; and then withal the Spleen and obstructed Mesentery sending upwards many fumes. So that the flegm heaped up in the head, partly by its great plenty, and its own weight, maketh it self a way and passage unto the parts lying underneath; and partly thrust forth by the strength and act of the expulsive faculty it rusheth unto the mouth and stomach, looseneh the teeth in the Gums, and besides excireth and causeth very much trouble and pain in the swallowing. The same (being much encreased in the stomach, by reason of its own proper distemper) causeth in him the loss of his Appetite; and from the agitation and weakness of the heart it produceth extream windiness; as also a pain of the Intestines, with a Costiveness of the belly, by reason especially of the hindered contraction of the transverse fibres distended by windiness; by which said Contraction the descent of the Dreggs is very much furthered. But the hotter habit of the aduſt blood, and both the Cholers, arising from the Liver and the obstructed places, greatly disturbeth his sleep, especially in the night time; by which it cometh to pass that from the retiring of the Spirits and the blood unto the internal parts the Evaporations become so much the greater. Neither is it any wonder at all that sometimes likewise there is kindled a Fever, not only an every day Fever by reason of the vehemency of the pain, but also a Periodical Fever resembling the Nature of a spurious Tertian, in regard that the obstructions being sometimes augmented, great store of excrements (and those very different one from the other) of all sorts, mingled together one with another, are very easily corrupted. And moreover also the smal sand and gravel may very wel happen to grow together from this manifold filth communicated unto the over hot Kidneys, and there retained, by the waſting of the more thin parts by the extraordinary great heat; and the Nephritic pain may likewise be generated by the abundant matter impacted in the Ureters, and not having an easie and speedy motion.

But of the occult and hidden Diseases, some of them are simply such; touching the existence whereof we may very wel doubt: and others of them are occult only in regard of their Essence and Nature; since that it is not in the least to be controverted, whether or no this illustrious Lord be afflicted with them; a truth so obvious and manifest. Simply occult is that Witchcraft, of which this illustrious person hath very rational and probable grounds to suspect that it hath been practised upon him; in regard that (as he relateth) there have been often found in his bed strange and admirable Magical Figures, of Bones, of Wax, and of other matter; as also such like Signs and Characters as Enchanters and Wizards are wont to abuse in destroying those they bewitch; and in regard likewise that he had most powerful and most implacable Enemies, by whom he doubteth not but that his ruine and destruction hath by all kinds of wiles, wicked arts, and inventions, been attempted. Since therefore it is confessed by all that by Witchcraft bodies may in a various manner be changed; and that thereby there often happen the very same effects that are wont to follow likewise upon the natural motions of the humor in the body ill affected; hence it is that Physicians can have no proper signs whereby they may constantly discover, and absolutely determine whether there be any Witchcraft practised or not. And this is now altogether the case of this most illustrious person. For there is none (I suppose) unless he be either a mere Dolt, or one that hath no good opinion of Christian Philosophy, that will dare to doubt whether or no the related suspicions may not frequently accompany Witchcraft; so that hereupon that there is in this present case no practice of Magick and Enchantment, can by no evident Argument possibly be convinced. But if haply any one shall object and say, That the aforesaid doubt is altogether needless and impertinent, since that all those Accidents that the Patient suffereth may very wel be referred unto the various, and those likewise sufficiently manifest vices of the humors; let such a one know, that such as are variously affected from a supernatural Cause, although the effects proceeding therefrom may seem to be natural; yet notwithstanding they cannot by the aid and assistance of the Physicians so easily be corrected and kept under, as those may that are vitiated, and derive their depraved power and violence from some Natural and sensible Cause: so that, albeit the knowledge of Witchcraft maketh not much for the attaining of the next and immediate Cause of the Disease; yet nevertheless it helpeth very much in foretelling the facility of the Cure, and presaging the issue and event of the Disease. I would to God that this noble person were altogether free from this infection; which doth indeed render the Cure of the Disease most pertinacious in all respects, and most intricate and difficult. But there are two other occult Maladies, with the which I plainly affirm that this noble person is affected, to wit, the Scurvey, and the Plica; the Nature of which Maladies as it is abstruse, and hitherto never sufficiently demonstrated by any, so the accident therein happening are most manifest. And in very deed (that so for brevities sake I may pass over the many other notes and signs) all men generally acknowledg and confess, that the Plica ariseth from the inexplicable and intrangled Locks of the Hair; but yet they are altogether ignorant of the proper Cause thereof, although they speak somewhat that is probable touching the common Cause which yet nevertheless cannot be sufficient for the constituting of the perfect Cure of the said Malady. But certain it is, that these hairs are conglutinated, frizzled, and entwisted from some dull and sluggish excrement of the third Concoction of the head, sweating through the Sutures and Pores; which being

restrained and kept in by the cutting off the hair, the Air more freely getting into the said open pores, there ensue thereupon most grievous Accidents. It is also certain that by the drinking of vitious Waters, or else from exhalations mingled together with the Air, after a long abode and continuance therein, this Malady may at length be contracted; and therefore it is that this evil is almost Epidemical unto the Inhabitants of those places that abound so much with these like Fountains and Rivers that are so well known unto this noble person. Neither can it be doubted, that such as have weaker heads, are sooner and more grievously infected. But of what kind that excrement is, and with what poyson infected, that seemeth a thing altogether occult and hidden; as likewise for what reason it doth infect the head rather than any other parts; and why in tract of time it vanisheth of its own accord, but yet will not in the least yield unto those Remedies that call it forth, and such as we call *Alexipharmaca* or Counterpoysons; and lastly, from whence it obtaineth that notable and altogether to be admired power of Conglutinating. For neither can these be referred unto the manifest qualities of any one humor (the first or second) although true it is, that according to the generating of these depraved humors more or less, the evil may possibly creep more or less, and be more or less confirmed. This may wholly be said (which is likewise usual in the explaining of all other poysons) that those Waters, and the exhalations thereof are infected with a poyson endued with this property that it is more annoying unto the head, is fixed more pertinaciously unto the root of the hairs, bindeth them together most strongly, and wonderfully writheth them, and most obstinately resisteth all kind of Remedies whatsoever, by reason that the peculiar nature and generation of this poyson is altogether unknown, inasmuch that this Noble man seemed to have said but the very truth unto me, that some Boors there were within his Territories that had discovered more of the original of *Plica*, as also of the progress, and Cure thereof, than those Authors that had written concerning the same; none of which have as yet been so successful, as to restore unto perfect health any one that hath been afflicted with this *Plica*. But for the Scurvy it is to be esteemed a far more grievous Malady, in regard that it creepeth into the whol blood; and the corruption thereof prevailing and getting strength may at length cause death unto the party therewith affected; which the *Plica* if let alone without cure, and not medled withal, never yet did unto any. So that this Noble person is not without good cause very much perplexed and troubled as touching this his Malady, being in good earnest grieved, that there is hardly any regard had unto this Affect in this City; where there hath scarcely ever yet been seen (at any time) any one infected with the Scurvy. And I (for my own part) although I have seen two Hollanders and one English man (both at *Venice*, and at *Padua* also) all three of them affected with an exquisite Scurvy, yet I neither expect nor desire that any Credit should be given unto what I say; but yet notwithstanding from what I find written touching the Scurvy by *Forestus*, *Eugalenus*, and *Sennertus*, most truly, and according to what they had seen, and found attested by many Histories, I shal presume (and that very confidently) to affirm that this illustrious Lord is at present much afflicted with the Scurvy. For excepting only the swelling of the Lips, and the flagginess of the putrid Gums (the Accidents of the Scurvy confirmed) all other signs and tokens of the Scurvy are present; to wit, the much and long use in former time of salted and smoke-dried flesh, unto which the Soldiery in the Septentrional parts are extremely addicted; add unto this the looseness of the Teeth, with some kind of itching in the Gums; the continual great lassitude and weariness of the parts, and especially of the internal; the extension of the left *Hypochondrium*, and the Mesentery; and the broad Efflorescencies, one while wan, and other whiles red, budding forth continually here and there throughout the whol body without any Feaver; which is conceived to be a Pathognomick Symptom of the Scurvy. Unto this we may add, that this illustrious person about some three years since was apparently affected with the Scurvy, and that the Physitian who then had him in cure (being most expert in the knowledge of the Scurvy) told him plainly and freely at his departure, that the reliques and remainders of the Scurvy were not in the least to be sleighted by him, but upon all occasions opportunely to be prevented. But perhaps the Italian Physicians do therefore sleight and but little account of the name of the Scurvy, in regard that they are of opinion that all the aforesaid accidents may be all of them referred unto those causes that are evident, and not called by unusual names, and such as in former times were not so much as ever heard of. For the redundancy of the adust Melancholy which is much defiled with Ichores and thin Excrements (which said redundancy of Melancholy and other the said humors, that they are at present to be found in this illustrious Lord, is manifestly shewn by the boiling heat of his Liver, the weakness of the Spleen, the familiar flux of the Hemorrhoids, and the frequent use of meats salt and earthy) may possibly breed and produce a lassitude, and litherness, but more especially in the internal parts, unto which the humor by its weight and heaviness naturally tendereth. Unto all this it may be added that it much impaireth the strength and natural powers, enervates and weakens the body, and extenuateth the same by corrupting the Aliment; it extendeth likewise the Natural Bowels by its great plenty and thicknes, and obstructeth the same by the admixture of the diffused Ichorous Excrements with the overhot blood. Neither are we at all to wonder that various spots arise, (since that both by its own proper thinness that

more hot part of the adust humor is easily carried forth unto the outside of the body; and that (the expulsive faculty of the internal Bowels being irritated) it is no hard matter for it to be purged forth through the loose skin, being porous and weak. And therefore to me there seemeth to be no cause why we should abuse the new and unusual name of the Scurvy in the explaining of things so well known. But how many sick persons have been most miserably cast away through this kind of reasoning, we may every where read in those Authors that have written touching the Scurvy; who all of them with one consent affirm, that never any yet being affected with the Scurvy, and having had administered unto him only these remedies that have acted by a manifest quality, and such as were proper to evacuate and temper Melancholy adust, and to take away the obstructions of the Bowels (although administered by the most able and expert Physicians) was thereby perfectly cured; in regard that the Melancholy blood (in this Disease) contracteth a corruption peculiar, and such as cannot well be expressed; which ought to be removed and taken away by those Alexipharmaca that are fit and proper for it, and that otherwise irritate and enrage adust Melancholy, if we regard the manifest qualities. For Spoonwort, or Scurvy-grass, Water Pimpernel, and certain kinds of the Cresses and Water Parsley (all of them being most sharp, and unto which alone the Scurvy giveth place) seeing that they attain unto the third degree of heat, and greatly dry, they would vehemently increase the vices of the adust Melancholy, and all the causes thereof, unless by their Alexipharmick quality they opposed the corruption of the Scorbutick blood. And that the said efflorescency of the spots in the Skin are the Concomitant of this Corruption, will be demonstrated even by this, That in those other Meridional Regions, in the which adust humors do oftentimes sway and reign, such like efflorescencies do not at all appear without a Fever. Seeing that therefore the name of the Scurvy designeth and pointeth out unto us something that may be useful in the Cure thereof, it is by no means to be exploded, as unusual and altogether unheard of by the Ancient Physicians, unto whom the name of *Plica*, of the French Disease, and the Measels, was alike unknown. Now if this be so, this illustrious person may very well conceive some hope of the recovery of his health (in regard of his Catarrh, pain of his belly, and want of his rest) from the help and assistance of the Italian Remedies: but I must profess that I understand not what is likely to do him any good in the Cure of *Plica* and the Scurvy wherewith he is also affected. The Remedy of the *Plica* is altogether unknown; and this illustrious person knoweth, that hitherto there was never any yet (either here or elsewhere) perfectly recovered of this Malady by the help of the Physicians though never so able. And what this noble person hath small hopes to expect from Physicians, he may perhaps within four or five years attain by the benefit of Nature; since that it hath been observed, that men grown have in the fourteenth or seventeenth year been wholly freed from it, the *Plica* falling off of its own accord, and never after more appearing. But Italy wanteth Alexipharmaca for the Scurvy, into which if any chance to be brought, they will hardly be preserved above one year. What is therefore to be done in this Case? This alone, to wit, That (for very good reason) he persist in the Cure as it is already begun (which may corroborate the Stomach, dry the Head, and draw forth unto the outward parts the virulent excrement of the *Plica*, by the help of a Decoction, and the external use of Bath-waters, as also by the dropping of hot Oyls upon the stomach) until the latter end of April, or the beginning of May, if at least he be able so long to endure and bear the strength of these extraordinary drying Medicaments. But then let him wholly apply himself unto the Cure of the Scurvy; that is to say, let him use the Decoctions of the opening Herbs, mingling therewith that quantity of the Alexipharmaca that the Physician well exercised in this kind of Cure shall judge fit and convenient. But in the general, the cure of the Scurvy is more especially to consist in this, That those things that open obstructions (the choice whereof is to be left unto the judgment of the Physician that hath undertaken the Cure) are evermore to be tempered together with the Antiscorbutick Remedies. For which cause I judge it fit and very requisite that the Patient with all possible speed make a Journey into the Northern parts, that so he may find the Herbs yet flourishing, and full of juice. For the general opinion is, that the Antiscorbutick Herbs benefit more by their Juice than by their Decoction, or any other way whatsoever. Let him have recourse unto *Daniel Sennertus*, the most eminent and famous Physician of our Age, and one most exercised in the knowledge and Cure of the Scurvy: let him wholly commit himself unto his Care, and be ruled by his advice, and in so doing (next unto God) let him expect his recovery from this most dangerous Malady from him alone. He liveth at *Witteberg*, where the Antidotes against the Scurvy are known very familiarly. Now if so be that before Winter he shall appoint him again to make use of the Hydrotick Decoction for the Head, (for the strengthening of the head, and belly, and the drawing forth of all thick excrements whatever) this I judge to be very beneficial and conducing unto the hastening on of the spontaneous and voluntary Cure of the *Plica*. His Liver though it seem to be extremely hot, and to require extraordinary cooling Medicaments, yet notwithstanding it will be far more safe in the hot Summer time to use a cooling Diet, than any cooling Medicaments: for the Stomach being but weak and fleshless by the use of these said Medicaments may easily be destroyed; and it is likewise observed that the *Plica* is but the more enraged by the use of refrigerating



refrigerating Medicaments. And this (most Excellent and Illustrious Doctor, and my very good Friend) is that which I thought fit to write back unto you, for the satisfying of your request. I have purposely forbore the mentioning of the Remedies, in regard that all such as were to be taken in Italy have already been most prudently prescribed unto the most Illustrious Patient, and to my knowledge have continually been made use of, and without any, or very little change made therein, continually practised by him: and as for such as shall henceforward be prescribed for him (in Saxony or elsewhere) for the Cure of his Scurvy (the State and Condition in which this Illustrious Person shall then be found to be after all the toyl of his Journeys being first thoroughly discovered, and a triall made of the Cure yet further to be continued) they are in a various manner to be accommodated unto the necessity of his body; neither may they indeed (without much arrogance) be so much as hinted unto one so expert as your self. God Almighty Grant that the Desires and Travels of this Illustrious Person may find happy Issue and success.

Thus far the Advice and Counsel of *Johannes Prevotius*, in Answer unto an Italian Doctor, on the behalf of that Noble Lord, Count *Nicholaus Sapieba*.

But the Patient returning home unto his own Country, and finding no alleviation of his Disease, but that it rather from day to day grew worse, following the advice of that eminent Physician *Dr. Prevotius*, writeth Letters unto me from *Codma*, 28. day of *May*, in the year 1628. wherein he acquaints me with making a Journey unto *Witteberg* for his healths sake. But when his Kinsred and Friends (by reason of so great weakness of his body dissuaded him from the Journey, as thinking that he would never come hither alive, he deferred his Journey until the Autumn following. But when he perceived his Disease daily to encrease upon him, he at length provides himself for his Journey; and in the month of *November* the same year, being carried in a Horse-litter he took his Journey through *Polonia* and *Silesia* (about a hundred German miles) and came hither unto me at *Witteberg*, but almost half dead. For he hung together (as it were) only by Skin and Bones; being not able to move Hand or Foot, no not so much as his Head. But I had rather relate the History of his State & Disease in the Words of his Domestick Physician, which he had brought along with him out of Italy (that famous and Eminent man, *Dr. Franciscus Mistrucius*, Doctor of Physick at *Forojulium*) then mine own; who gave me an account of the Disease of this noble Lord, describing it in the manner following.

Among those many remarkable and famous things wherein Antiquity flourished, and was of old much admired for, this Custom of theirs (most excellent Doctor) was evermore held to be one of the most famous and laudable, that they made Journeys sometimes as far as unto *Delphos*, that they might there receive an answer in doubtful Cases from the Oracle of *Apollo Pythius*, an Oracle much famed all the World over. After the manner of these Ancients this Generous and most Illustrious Count, my Lord *Nicholaus Sapieba*, Standard-bearer General of the great Dukedom of *Lithuania*, Careful as he is for his own safety & preservation after trial made of so many and so various Medicaments, after so many Answers received both in his own Country *Polonia*, & like-

wise in Italy, hath at length arrived now at this time hereat *Witteberg* (no *Delphos* I confess, but in very truth another *Athens*) that he may now Consult with you, I had almost said, the most wise Oracle of Physick; and expecting from you the utmost of your assistance, which he earnestly implores & expects, and you have ever out of humanity afforded it unto any. And (since it is a task imposed upon me) I will very briefly indeed, and yet notwithstanding distinctly, relate the History of this Noble Person; his Affects and as for those few remedies that I shall call to mind, for the removal and overmastering of this kind of Malady, I shall prescribe them with that modesty that becomes me; and yet nevertheless referring otherwise al unto your most quick apprehension, and accurate Judgment (as unto a *Lydian stone*) for the further polishing and adorning thereof.

The principal Affect touching which this Noble Lord is so greatly solicitous (as of that which hath twice or thrice threatened even Death at the door) is the long lasting and cruel pain of all the lower Belly, having its residence one while in the right, and another while in the left *Hypochondrium*, and as soon again about the Navel. This is now the seventh year, since that these fierce and cruel pains and torments have had their recourses; which have been so pertinacious and unyielding, that (let me freely speak it) they have now almost driven both the Patient and the Physician likewise even to desperation; so far have these torturings hitherto been from yielding unto any Medicament. There is now a year and a half past since that I was added unto those that had this Noble Person in Cure; in which time only I shall acquaint you what the quality of the Disease hath been, that so there may be no vain repetition of what went before, all things in a manner keeping (as it was related unto me) the very same Course and Tenour at all times. And therefore (that we may speak something of what happened in that space of time) the Case in a manner stood thus. In the month of *July* out of Italy we came to *Cracovia*, where this Illustrious Lord had at that very time committed himself unto the care of a certain Physician that professed the Curing of the

Scurvy; who without due respect had unto the Counsel of Hippocrates (to wit, that before the Dog-star, and during the time thereof, Purges work not kindly, but are rough and harsh) and not at all regarding, that this Noble Lord stood at that time in more need of rest and quietness (by reason of the many discommodities he underwent in his long and tedious Journey) then of any new agitation and disturbance, of Medicaments, began to administer unto him those same Scorbutick Medicaments. to wit, the Syrup of Spoonwort or Scurvygrass, the Juice of the same Herb, and other things of the same rank and order; adding thereto some certain Powders and Potions that were purging; in which said Medicaments this Physitian persisted for six whole weeks together, without any apparent benefit at all. But at length his most Illustrious Lord seeing that he was not like to get any good from him, began to think of his departure thence; and so about the end of August we came to Lublin; whither so soon as ever we were come, those fierce and cruel torturing pains assaulted him all the lower Belly throughout, reaching even unto the Region of the Loyns; which would not admit of any the least intermission, untill after a long time, and many difficulties, and much drawing forth of the peccant humors; as likewise both upwards, by the benefit of a spontaneous Vomit; and downwards also by the frequent use of Clysters, of a certain stinky Matter, white, insipid, sometimes thin, bitter, yellow, and sometimes dusky; and also withall great store of Wind: In which pain the Belly was so Costive, that the many Clysters that were put up, although otherwise purging, would not be brought back again without much difficulty: the Urine likewise that he made came from him red, and with much straining, and not without an extraordinary pain about the Reins; which afterward (upon the abatement of the pain) flowed forth in greater abundance, and withal be voided much red Gravel. And so (the pain being asswaged) from Lublin we came to Codna, about the latter end of October; this Codna is a City of his Lordships. But shortly after our arrival there, the Obstructions return, and the pains are renewed in their former beight, with frequent swooning and fainting fits (like as but a little before it had befallen him in his Journey) insomuch that we wholly despaired of his life: in which his pains & fainting fits, although that by putting up of mollifying Clysters, and by the use of Evacuating Remedies given him downward, his Belly was much opened and loosned, so that (even as was said before) there were cast forth Excrements of all sorts, with some Evident alleviation and ease; yet notwithstanding the Disease returneth again with no less vehemency then before, other new Obstructions still succeeding the former; neither hitherto could the Disease be extirpated. Yea in the

month of August last past, after the taking of a China Decoction, his Disease so far prevailed upon him for about the space of fourty daies, and so miserably was he tortured and wracked by his pains, that we could scarcely move him in his bed, he was almost speechless, and could very hardly draw his breath. And so in his Journey, in the midst of his Coughing, his breathing was thrice so stopt and hindered, that we were altogether in fear that he would have been strangled. But you must know moreover, that besides those intollerable pains that are felt in all the parts of his Belly; there are others likewise that are sometimes extended throughout the whole Back, and unto the very utmost Joynts; but especially they pass along through unto the joynts of the Arms and Feet: yea in the journey aforesaid, such and so great were the pains that he felt about those parts (after the torturing pains of his lower Belly) that the like thereunto he had never before felt in all his life: for (even as erewhile, you might likewise have observed, most Excellent Doctor) he could scarcely take any rest, nor hardly stir Hand or Foot: unto which pains there at length followed a Palsie (not such as is indeed Usual, and properly so called) of the Hands and Feet, with a pining away, and illfavouredness of all the Members, as appeared unto all the beholders. And it is likewise to be observed, that those pains do now recur more frequently then formerly in the years past. There is also adjoynd a Pruriginous or itching yellowishness, and Excrescence of the Gums, with certain red spots, like unto Flea-bitings, appearing more especially in the Back and Thighes, which by degrees tending unto a pale and wan color at length wholly vanish. And although that the pains of the Abdomen do now and then intermit; yet nevertheless his leanness still continueth, as also the extraordinary Lassitude of his whole body; the Palsie in like manner still persisteth, and the pain of the joynts with such and so great an astringency of the Belly, that he cannot (in truth) of himself void forth any the least shew of excrement: and therefore we are fain often to provoke it, and put it forward with Aloes Rosat, and every other day with Clysters. But if the Evacuation be but for one day omitted, then to be sure, his tormenting pains return afresh upon him. And wonderful it is to see, what abundance of Excrements of all sorts (but especially of Cholera and stinky Flegm) he daily without fail voideth forth by the benefit of these Medicaments; and yet nevertheless his Disease still persisteth with all kind of Obstinacy. Unto those aforesaid purging Medicaments we adjoyne likewise those things that Corroborate; such as, the Rolls of the Specie of Aromaticum Rosatum, Diarrhodon Abbatia; and adding thereunto Corals and Margarites, the Confection of Hyacinth, Alchermes, and other things of the same rank; and yet by all these means we have hitherto

to done him no good. But as for what concerneth those doubts that by your Letters you signified unto me that I should explain unto you (by loosening the knots of them) thus it is, as far as I conceive. As for that Hemorrhage which he had some four yeers since, it proceeded not from any debility of the Bowels; for after it he did not again recover his health in that measure that for almost a yeer and half before he had enjoyed it in Italy: neither yet from the retention of the Hemorrhoids; for together with it the Hemorrhoids likewise had their Periods every month; which when (from the midst of the yeer only) they altogether intermitted, I was then constrained by Art to provoke them three or four several times. It remaineth therefore that the said Hemorrhage hath its original from the acrimony & thinness of the blood, which it contracteth from the Head extreemly overheated. And as for the Plica which he beareth about with him in his Head, it first of all manifested it self almost a yeer after the beginning of those pains; neither is it hereditary; for none of his Stock before him ever had the like Affliction. And as for the destillation from his Head, it hath continually been, and as yet abideth in great abundance, even as it appeareth from those things that are continually voided out of the Head, by the Nostrils and Palate; the greatest part whereof falleth down unto the Stomack, and from thence to the Intestines; from whence perhaps the aforementioned pains receive no small part of their fuel, and that which continually feeds and fomenteth them. The Pulses (that otherwise are alwaies obscure, with some kind of frequency) admit of a variation, according unto the Intenseness or remissness of the pains. The order and Course of his Diet for the most part (especially in the paroxysm of his pains) hath been guided rather at the pleasure of the Assistants, then by the Advice of the Physician; of Gulliser, of Capons mashed together, new Eggs potched and supt up, and Broths aromatized with all kind of Spices. He drinketh Italian Wine, of a good substance. He hath an Appetite so dejected and weak (especially during the continuance of his pains) that even the very smell of Flesh maketh him ready to cast: He is continually thirsty, and thereupon he is very apt evermore to exceed in the drinking of Wine. He passeth whole nights (for the most part) without sleep; and if he chance at all to sleep, that sleep is altogether unquiet, and full of Phantasms. In Italy how and in what manner this Noble Count hath been handled by Medicaments, you have now already seen at that can be written concerning the same. These therefore are those Symptoms that so fiercely and cruelly afflict this most Illustrious Person. From these (as far forth as it is possible) he desireth to be freed. And if ever help and assistance be to be expected for humankindes sake; be in very truth (in these his so great

miseries and sufferings) desireth and expecteth this assistance from none other, but from your self alone, next under God: I say from thee alone (most Excellent, and Expert Sennertus) whom I see to flourish (like as a most fragrant Rose in the most delightful Garden of Physick) among the thickest Brambles (as I may so call them) of these difficult Diseases in the aforesaid Province of Saxony; and for my own part (I profess) I much admire thy Abilities. Thus far Dr. Franciscus Mistrucius.

And with all these Maladies was this most Illustrious Count continually afflicted. And the truth is, that which exceedingly troubled and tortured him, was the irremovable Obstruction of his Belly, which evermore continued, unless it were removed either by Clysters, or Purging Medicaments. For the moving of his Belly, and the keeping of it open, he had brought along with him out of Italy a great quantity of Aloes Rasat. But I well knowing that by the use thereof his Belly was dried much the more, dissuaded him from continuing the Use of it. When he went to stool he then voided Flegm (Viscid, Clammy, and very Tenacious) in great abundance. And withall at that same time he was usually infested by those most grievous and intolerable pains in the Belly, which were most and ended terminated in the pains of the Joynts; as for the most part these likewise again ended in those former. But if it so chanced that upon the invasion of these Belly pains he were taken with any great Vomiting (which very often happened) his pain were then the more moderate, and did the sooner remit. There was moreover present a Palsie of all the Members, as likewise of the Tongue of tentimes, so that he faltered therein, and could not speak distinctly. And yet notwithstanding those most grievous pains of the Joynts (with a certain kind of Swelling) accompanied the Palsie, as we have already said. At certain times also (by intervals) he was infested by a Symptom that greatly terrified him, to wit, a fear of suffocation, and a certain strangling as it were (of which we have already made mention in Chap. 4. touching the Scurvy) which proceeded from a Styptick Vapor contracting the Muscles, moving the Larynx, and as it were violently pulling them together. In the Body (the Back especially) there appeared warts spots; the Teeth were loose, and indeed some of them were already fallen out. There was likewise continually to be seen in the hollow of his Hands a perpetuall redness, proceeding (no doubt) from the heat and dryness of the Liver; and this arose from the unreasonable use of Medicaments heating and drying. For he had not only for forty daies together used the Decoction of China (as is before said) but other Medicaments of the like Nature. He lay whole Nights (many times) without any sleep at all. There was likewise present a Fever, that

observed



observed no course at al, such as those are wont to be that accompany the Scurvy. Such was this Patient when I first received him, that for the recovery of his perfect health I could give him no assurance at al; neither could I wel give him any certain hope of the preserving his life from a sudden death, which continually threatened him. But yet nevertheless in regard that he had come so far a Journey for his healths sake, I endeavored (what I could) by my continued care and pains to effect his desire, and to do him good; and by the good hand of the Almighty assisting me I so wrought, that his Belly was able again to do its office; and that the excrements acquired again their natural consistence; that the pains of the Belly and Joynts ceased; and that the Arms and the Hands had likewise their motion restored them; insomuch that the Noble Lord could not only perform other offices with his Arms and Hands, but could likewise write Letters. His Belly also that was altogether extenuated began again to increase, and not only so, but even also to grow fat again.

And yet notwithstanding there stil remained and pertinaciously persevered the Palsey of the Feet, and their contraction; which could not be taken away by any kind of Medicaments, no not by the use of those admirable Baths (to w<sup>it</sup>, the *Teplicenser*) into which he was put, in the month of June, in the year 1629. and as I conceive, it wil hardly ever be wholly and perfectly cured.

Now the Medicaments that I made use of were directed unto these ends and purposes; to w<sup>it</sup>, that the Belly might again be made loose and soluble; that the Cacochymy might by degrees be evacuated; that the vice of the humors, and the Scorbutick disposition of the Bowels might be amended by Antiscorbutick Medicaments; and that the most urgent Symptoms might be quite removed and taken away.

As for what concerns the matter of Physick; here to set down al the forms of those Medicaments which almost every day were administered, it would be too tedious, and not worth the while; in regard that the same Indications stil abiding, the very same Medicaments (but yet nevertheless with often variation of the forms) are frequently to be repeated in this long lasting and contumacious Disease. We wil therefore only subjoyn the matter of those Medicaments that answer unto the Indications, extracted from the forms: which yet nevertheless were not al of them administered in al Medicaments, but according unto the present condition, and the Nature of the Circumstances, sometimes these, and then another while those were administered. And yet notwithstanding we wil here add a form or two. For the loosening of his Belly (which unless some waies irritated would scarcely ever have done its office) he had indeed, as I told you before, brought out

of Italy great store of Aloes Rosat. But when I perceived that by the use thereof his Intestines were but the more dried, I dissuaded him from the use of it. And so instead thereof he often made use of Clysters (unto the which his body had been much accustomed) made of the Roots of Marsh-mallows, Polypody of the Oak, the Leaves of Feverfew, of the Herb Mercury, beats-breech, Mallows, Marsh-mallows, Centaury the less; the flowers of Camomile, and Elder; Dill-seed, Fenugreek seed, Lin-seed, Cummin-seed; Electuar. Diacatholic. Diacartham. Benedict. Laxativa, Hiera simplex, Syrup of Rotes Solutive; Oyl of Camomile, of Elder, of white Lillies, and Yelks of Eggs.

But the Laxative Syrup: were made of the Roots of Polypody of the Oak, Fern, Succory, the Rinds of Tamarisque, the Roots of Capars, Fumitory, Agimony, Endive, Germander, Spleenwort or Miltwaste; the seeds of Carthamus, Raisins; Leaves of Sene, Agarick, Zedoary, Galangal; the Rinds of Citron; the Cordial flowers, Manna, Cream of Tartar, and Sugar; as much of al these as shal suffice.

Pills of the Mass of Pills of *Fabricius Aquapend.* with the Species of Diacartham.

For the correcting the vice of the humors, and the amending of the Scorbutick disposition, he made use of Antiscorbutick and opening Medicaments. As for example,

Take of Scorbutick Water (described in the third Book of our Practice) four ounces, of Spoonwort or Scurvygrass, and Borrage, of each one ounce; Conserve of Spoonwort an ounce and half; of Betony half an ounce: Let them stand al night, and strain them in the morning; adding thereto of Tartar and Vitriol, or the simple mixture, of each half a dram, and mingle them together. *Allo,*

Take the Juyc of Spoonwort newly pressed forth, of Water Pimpernel or Brooklime, and Water-Cresses, of each a quart; of Succory root newly Candied six ounces; Salt of Tartar half a dram. Let them stand digesting in a close Vessel for some daies; and afterwards strain them; unto the straining add, of white Sugar four ounces; Conserve of Borrage, Betony, and Fumitory, of each two ounces: let them stand again in digesting one whol day and night; and afterward strain them. *Allo,*

Take of the simple Mixture one ounce and half; Rob of Juniper one ounce; Juyc of Spoonwort, Water-Cresses, Brooklime, of each six ounces; Species of Diarrhod. Abbat. two drams; Syrup of Borrage, of the lesser Gilliflower, of Acetosil. Citri, of each one ounce and half; Cinnamon Water half an ounce; let them stand digesting, and afterward pour out al thereof that is cleer. *Allo,*

Take of the simple Mixture one ounce and half; Rob. Juniper two ounces; Extra<sup>ct</sup>. Calam. L1 Aromat.

*Aromat. one scruple; Saffron half a scruple; Conserve of Spoonwort three ounces; Fumitory, and Sorrel, of each one ounce and half; Juice of the Citron new drawn four ounces; Scorbatick Water six ounces; Spoonwort Water four ounces; Cinnamon Water half an ounce: Let them stand in digestion; and afterward strain them.*

He made use likewise of the Pills of the Trochisques of Capars; the Extract of Succory, Spleenwort, and Gentian; and also, Cream of Tartar Vitriolat.

There were likewise Rols prescribed for him, of the Species of Aromat. Rosat. Abbat. Diarrhodon Abbat. Plures Archont. Extract of Orrace, Elecampane, Eryngus, the Pouder of Bezoar: as likewise this Pouder:

*Take Species Diatreos one dram; Calam. Aromat. the seed of Cresses, Rocket, Saffron, of each one scruple, Cinnamon one dram; Cream of Tartar two drams; make a Pouder.*

He used Electuaries made of the Conserve of Spoonwort, Betony, Sage, Succory, Germander, Ground-pine, Citron Rinds Candied, the Root of Vipers Grats Candied, Rob. Juniperi, Confect. Alchem. Syrup of Borrage, Gilliflower, Acetof. Citri.

He made use also of the Wine of Spoonwort; which is made, if some handfuls of Spoonwort (while it is yet green) be bruised very smal, and a few pints of Rhenish Wine poured thereto; and then let them stand in a Cellar in a Glais Vessel, for three daies; and then afterward strain them. And this also,

*Take Wormwood three pugils, Conserve of Spoonwort three ounces, Green Water-Cresses bruised one handful; the dry Rinds of Citron six drams; pour thereunto of Rhenish Wine two quarts: Let them stand in a Glais for some daies; and after this pour out that which is cleer.*

And at length when I had once gotten the Spirit of Spoonwort from that most industrious Apothecary of Gorlicum, Johan. Buttnerus, which (like as he doth also out of most other Plants) he artificially prepareth by fermentation and distillation, that so it may stil retain both the smel and the taste of the Plant; when our Patient was tired out with, and even loathed the taking down of any other Medicaments, he then most frequently, and with very much benefit, made use of this Spirit.

And likewise that we might provide for the safety of the Spleen (which at this time was very far amis) we caused an Emplaster to be put upon the Spleen.

The pains of the Belly and the Joynts took place (as it were) by turns, and reciprocally; so that when the pains of the belly remitted, then the pains of the Joynts began; and so on the contrary, when the pain of the Joynts ceased, then those of the Belly began to disquiet the Patient; and both

of them were (for the most part) much moderated, when he plentifully (which very often so happened) cast forth the tart, salt, and bitter humor, in an almost incredible abundance.

For the mitigation of the pains of his Belly, there were prescribed Clysters, of Marsh-mallows, Camomile, Fenugreek seed, Dil seed, Linseed, Oyl of sweet Almonds, Oyl of Dil, Oyl of Camomile, Honey of Roses, Oyl of Bayberries; and unto the Belly there were laid both Fomentations and Cataplasms of the same and the like Medicaments; and the Emplaster of Lawrel Berries. He used likewise the Decoction of the flowers of Camomile with Manna, and the Oyl of sweet Almonds.

For the pains of the Joynts in the Hands and Feet there were used Fomentations and Cataplasms, of the Roots of Marsh-mallows, the flowers of Camomile, and St. Johns wort, Wormwood, Betony, Water-Cresses, flour of Linseed, and Fenugreek seed, Earthworms, Oyl of Elder, Oyl of Camomile, and the Unguent Dialthæa.

The Wife of this Noble Lord told us that in her Country (for the moderating of such like pains as these) they had in use Cataplasms made of the Horse Raddish, bruised and boyled; and (this being grounded upon Reason) there were therefore such like Cataplasms imposed now and then, with very good success.

There were likewise used Fomentations of Elecampane Roots, Marsh-mallow Roots, Bryony Roots, Lawrel Leaves, Sage Leaves, Rosemary Leaves, Herb Ivy Leaves, Wal-flowers, Lavender flowers, Prim-roses, Arabian Stoechados, and Juniper Berries. As also Inunctions of Marsh-mallow Roots, and Bryony Roots, and Earthworms boyled unto a softness; adding thereto the Juice of Spoonwort and Water-Cresses, Unguent of Bdellium, and of Turpentine, Oyl of white Lilies, Oyl of Camomile, as also of the Unguent Valeriola; which we may find in the fourth Book of his Observations. And so likewise this:

*Take the juice of Brooklime, Water-Cresses, of each one ounce and half; Oyl of white Lilies two ounces: boyl them til the Juices be consumed, and then add Oyl of Turpentine half an ounce; Oyl distilled out of Juniper Berries, and the Unguent of Bdellium, of each one ounce; Gum Elemi, and Gum Hederæ, of each three drams; Mans Fat half an ounce: Mingle them.*

Also the Unguent that is made of the Root of the Florentine Orrace, the Leaves of Sage, Primrose, Tansey, Mugwort, Betony, Bayberries, Juniper Berries, Rocket seed, Lavender flowers, and Spike flowers, boyled in Wine, and the Oyl of Earthworms, the Oyl of Foxes, the Oyl of Rue, the juice of Water-Cresses; and then strained, adding thereto the distilled Oyl of Juniper, Saggapenum, Bdellium, Syrax Calamit. Gum Elemi,

mi, the Fat of a Fox, and Mans Fat, and Wax.

My own Emplaster likewise for the Nerves was added, of which this is the Description :

Take Leaves of Lawrel, Betony, Rosemary, Ground-pine or Herb Ivy, and Prim-rose, of each one handful; flowers of Lavender half a handful; the tops of St. Johns wort one handful; Earth-worms washed in Wine three ounces; boyl them in good Wine; and being strained add thereto Oyl of Camomile three ounces; Oyl of Orrace an ounce and half; boyl them until the Wine be consumed; and then add of cleer Turpentine three ounces, Goats Suet an ounce and half; Gum Elemi two ounces, Tacamahaca dissolved, Ship-pitch, Rosin, of each one ounce; boyl them again; and then add, Licharge three ounces, Wax as much as wil serve the turn, and make an Emplaster; unto which in the end add Oyl of Turpentine, and of Juniper Berries, of each an ounce and half; of Rosemary, and Sage distilled, of each one dram; and mingle them.

For the Palsie of the Tongue there were made use of Mouth-Washings of Sage Water, Rosemary Water, Extract of Calamus Aromaticus, Oxy-mel Scillitick, the distilled Oyl of Nutmeg; and likewise Inunctions of the Tongue, of Treacle, Extract of Castoreum, of Calamus Aromaticus, Oyl of Nutmeg, of Sage, and Mustard seed. There were also Trochisques made of the same.

For the Vices of the Gums, and the looseness of the Teeth, there were prescribed Unguents of the Leaves of Columbines, of Sage, Mints, Nutmeg, flowers of red Roses, Allum, Honey; Collutions or washings for his mouth there were made of the Decoction of Fern Root, and Bistort or Snake-weed, the Leaves of Water-Cresses while they are yet green, Sage Leaves, Mints, Columbines, Frankincense, the Water of Sage, and Mints, Alum, and Honey Rosar.

And by these Medicaments indeed, although (as we told you before) that the Disease of the Scurvy was for the greatest part removed and cured, (excepting that the Palley of the Feet remained still firmly fixt and immovable;) yet notwithstanding the *Plica* held on its old course still; only there was one Nail on one of his Toes that returned unto somewhat a better state and condition.

## Chap. 10. Of the Vices of the Nails.

First of al, if the Nails have their own Natural Constitution, like as other parts of the body, they are then smooth and plain, and they have a color white and red, and a due and meet hardness and thickness: if this their Natural Constitution be changed, it falls then under the Nature of a Disease.

### Nails unequal, thick, and rugged.

And first of al, indeed the Nails are sometimes unequal, and become thick and rugged. Which happeneth from the juyce by which the Nails are nourished, abundantly flowing thereunto. For then they are not only made long, but they likewise become thick, unequal, and rugged. And this happeneth from strong and hard labor, by which the Nails about the roots of them are as it were moved together, and so they attract the aliment in greater abundance.

This Vice cannot easily be amended, unless that the external Cause cease. But if the said external Cause be removed, then in process of time (those thick and unequal Nails being by degrees cut off) other that are better wil succeed in the stead of them.

### The Roughness of the Nails.

Moreover, the Nails also become rough, and ill colored, and thick; which Vice is called the *Scabrities* and *Lepra* of the Nails: in which Vice, not only the magnitude, but likewise the figure and Conformation of them is viciated.

This Vice is generated from the vicious and excrementitious humors mingling themselves with the aliment of the Nails. Now those humors are more especially Melancholick, which is shewn even from the color it self of the Nails, they having in them something of Tartar, from whence the said hardness proceedeth.

This Vice is manifest unto the Eyes, and bringeth along with it rather a deformity, than any danger; and yet nevertheless it may hurt and hinder the laying hold upon any thing, which is wont to be done by the Nails; and it likewise sheweth withal, that there is some vicious humor lying hid and concealed in the body, that Nature thrusteth forth unto the Nails; like as we have before told you, that those who are affected with *Plica Polonica* have also this evil befalling them.

This Vice is cured, if what cannot be amended be by degrees pared away, and the excrementitious humor dissolved. If the Vice be but new begun; then the Decoction of the Vetch Orobuz and Lentiles wil be very convenient; or else a Cataplasmi formed of their meal: or else let Sulphur with Oyl and Vinegar be laid upon them. Pliny writeth that Orach (or Attach) wil take away the Nails without any Ulcer; as we find it in his 20. Book, and Chap. 20. And the lesser Celandine with Pitch doth perform the very same. Or else let an Unguent be imposed, or an Emplaster made of Pitch, Wax, Rosin, Mastick, Burgony Pitch; or else lay on Raisins with Opopanax, or Cresses with Lin-seed: stronger are the Roots and Leaves of Crowfoot. Or,

Take Rosin half an ounce; Turpentine two dram; new Wax, and Goats Suet, of each five dram;



drams; Mastick one dram and half; Frankincense two drams; Make an Emplaster.

See more of these in *Paulus Aegineta* his second Book, and 81. Chapter. And in *Avicen*, in the seventh part of his fourth Book, last Tract, and 14. Chapr.

### *The color of the Nails changed.*

But sometimes only the color of the Nails is viciated; so that they become leaden colored, yellow, and black. Which Vice happeneth not only by reason of the change of the color of the flesh lying underneath (as some have thought) but because the very aliment of the Nails is vicious, and endued with such a color. And now and then likewise the Nails are here and there marked with certain small white spots (especially in the younger sort of people) which arising for the most part about the Roots of them, together with the growing Nail they change their place; until at the length they are pared off with the Nail; and they have their original from the thick juice that mingleth it self with the aliment.

In Curriers also (by reason of their handling of Lime and Ley) and in Dyers (by means of their handling their Dying stuff) the Natural color of the Nails is frequently changed into another, which oftentimes lasteth and continueth long.

This Vice indeed bringeth with it no danger at all; but yet it causeth a deformity, and is very offensive and troublefom unto Men, but especially unto Women.

But now that this Vice may be taken away, the vicious humors (if they lie hid in the whole body) are to be evacuated; and then after they are to be taken away out of the Nails themselves. This may be done, if the new growing nails be very often pared, until at last is viciated be quite taken away. And unto the Nail it self that Emplaster that ere while we mentioned (in the *Leprosy* of the Nails) is to be applied.

But there is then a peculiar change of the color of the Nails, when by reason of a Contusion there is blood shed forth under the Nail; and when shining through the Nail it produceth a red, or a blackish color, as it is wont to happen in Suffusions. Which if it chance, *Avicen* adviseth to make a hole through the same, and so to let out the blood that lieth underneath the Nail. And yet nevertheless, there is in thus doing great care to be had, lest that in the perforation the nervous skin lying underneath be hurt, and so a pain be thereby excited. The Nail having a hole made through it (or if it hath not, it maketh no matter) lay upon it Candy Dittany, with the Glue or Gelly of fish. Or the Basilick Emplaster, or the Root of Solomon Seal well bruised. Or,

Take *Sagapenum* as much as you please; min-

gle it in a Mortar with the Oyl of Nuts, that an Emplaster may be made and laid thereon.

### *The Crooking of the Nails.*

There are some likewise that make mention of the crooking of the Nails among the Vices of the Nails; and indeed it is of that crooking wherein the Nails (in their extremities) are rendered crooked, and as it were hooked (like as we see it to be in Birds) and this crooking they say proceedeth from a driness that doth overmuch contract the substance of the Nails. But this Affect is very rare; neither (when any such there is) doth it proceed from driness, but from a vicious matter; by reason of the abundant flowing of which the Nails come to grow in that vicious and uncouth manner: and this (as we have already told you) happeneth in the *Plaga Polonica*. And therefore there is no other way or method of Curing of this Evil, than that of Rough and Leprous Nails.

This is not unusual (especially in the Feet) that the Nails grow forth too much at the sides, and make a hole through the skin lying underneath; upon which the flesh there in that place beginneth to grow luxuriant, and to become proud, and proveth a very great impediment, both in putting on of the shoes, and also in going. Which if it happen, we are then to sprinkle upon the place burnt Alum, which taketh away whatever of the flesh is superfluous; and afterwards the Nail that hath grown forth too long is to be pared off.

### *The Cleaving of the Nails.*

And now and then likewise solution of Unity happeneth unto the Nails; so that they are cleaved either longwaies, or else transversely, and as it were cut into two thin plates.

And this cometh to pass either from Causes external, as Wounds; or else from the viciousness of the Humor, which sometimes falleth out in the French Disease, and the Leprosie.

If the Cleft be from a Wound, the Wound is then to be healed: yet nevertheless the cloven Nails can no way be united; but while they grow a whole and sound Nail is wont to succeed the cloven: but care must here be taken lest that the Nail in that part where it is cloven should grow together with the skin lying under it. For if this should happen, the Nail will never be whole as it ought to be; but will evermore grow forth cloven and in two parts.

If this Fissure or Cleaving arise from any other Disease, and vicious humors, then that Disease is to be cured, and such like Topicks are to be administered unto the Nail as are wont to be applied in the roughness of them.

The

*The Falling of the Nails.*

And at length also the Nails are wont to fall off, leaving the ex-ream part of the Finger quite naked: which Vice may not unsafely be referred unto Diseases in the number; since that without cause the Nails are excluded from the Number of the parts, notwithstanding that they have their Natural conformity and use, and are nourished like as other parts are, and cohere (as all other parts likewise do) unto the whole. But why the Nails fall away, this first of all and principally proceedeth from the fault of the Aliment; which when it declineth into another Nature, and so indeed that the Aliment is not only become simply viscidous (the same that happeneth likewise in the ruggedness and roughness of the Nails) but that it is also sharp withal, and corrodeth the roots of the Nails (in the very same manner as the roots of the hairs are wont to be gnawn asunder in the *Alopecia*, *Opbiasis*, and shedding of the hair) the Nails then fall off. And so very often after Ulcers and Wounds about the roots of the Nails, the Nails are wont to fall off, Pus or filthy matter gnawing asunder the roots of them. And when the roots of the Nails are eaten asunder by the said purulent matter, although the Nails do not then fall off of their own accord, yet by the Nail new growing they are thrust off. And so it is found that after pestilent and Malignant Fevers, not only the hairs have shed, but the Nails likewise have fallen off: and this hath likewise been observed to happen after the drinking of Poyson, and in the French Disease. And moreover, the very same may likewise happen from the want of Aliment; like as we have seen and found by experience, that such as have travelled in the Snow, and that have held their hands long in cold water, have had their Nails fall off, either from a Constipation of the Pores of the hands that carry the Aliment unto the Nails, or else from the extinguishing of their Native heat.

Now this Vice (which is obvious unto the sight) doth not only cause a deformity, but likewise burthen the laying hold on any thing, for which the Nails serve: and moreover (in regard that the Nails do as it were defend the Fingers ends against external injuries) by this means the Fingers are rendered as it were defenceless, and easily obnoxious unto all kind of external injuries. And therefore this Malady doth deservedly require a Cure. And yet nevertheless all the Nails that fall off cannot be restored. For if from a depraved humor the whole root of the Nail be eaten asunder, and the Malady hath now long continued; or if by reason of the want of Aliment the Nails be fallen off, they can very hardly be restored. But if the root be not wholly eaten asunder, and the Malady be but new begun, there then remaineth some hope of a Cure: and therefore in this case we are

to cover the Nail with a Cap made of Ladanum, Ammoniacum, Bdellium, and Wax.

*The looseness of the Skin about the roots of the Nails.*

And then at length, there is likewise a Vice, not of the Nails themselves, but of the Skin that is next unto the Nails; which the Latines call *Reduvia*, and the Greeks *Paronychia*, because that it is next unto the Nail. But this *Paronychia* of the Greeks is a Vice far different from the Disease that is described before (in the first Part of this fifth Book, and Chap. 14.) and is there reckoned up among the Inflammations, and by the Arabians is also called *Paronychia*. For that *Paronychia* (as we there told you) is a most grievous and dangerous Disease. But the *Paronychia* of the Greeks (of which we are now speaking) or *Reduvia* as the Latines call it, is the least and lightest of all Affects, and bringeth along with it no danger at all; and scarcely deserveth the Care and pains of a Physician; as appeareth out of *Galen*, who in his Comment, touching the Nature of Man about the end thereof, disputing whether or no that Book were written by *Hippocrates*, saith that *Sabinus* and the rest that reject that Book, do indeed take notice of a few small faults that are therein, but they neglect and pass over without any notice taken of the faults that are far greater, and worth Consideration, after the fashion of those ill Physicians, who while they consider and take notice of the *Paronychia* of sick Persons, they then through Ignorance neglect the greater and more difficult Evils.

Neither indeed is there any reason for us to think, that the *Paronychia* of the Greeks and that of the Arabians is one and the same Affect, and that *Reduvia* is a small and beginning *Paronychia* (such as the Greeks describe) either in the Swelling, or Inflammation, or any notable pain; which is in a Species of the *Rhagades*, and is described by the Greeks. But if it be already become such, it will then turn into an Inflammation, and a dangerous Impostumation, such as is described by the Arabians, and is by them named *Panaritium*. For these things do no way answer to Experience. For neither doth the *Panaritium* of the Arabians begin from such like Clefts, neither is the *Reduvia* and *Paronychia* of the Greeks ever turned into the *Panaritium*.

*Reduvia* therefore, or *Reduvia*, is a certain slight Cleft of the Skinf-skin at the Roots of the Nails.

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*Reduvia, or the looseness of the skin about the roots of the Nails.*

It proceedeth from a salt humor eating through the Skin in that place.

The Vice appeareth sufficiently of it self; neither hath it any danger at all to attend it, but only that it is somewhat troublefom by reason of some light and smal pain that followeth it, whenas the Skarf-skin being cleft and divided the true Skin is left quite naked.

Now it is Cured by Purslane, the Roots and Seed of Mallows, Oyl of Violets, and Oyl of Roses.

### *Clefts in the Elands.*

In the last place we think it not amiss, to mention also the Clefts that are oftentimes found in

the Hands; which happeneth more especially about the beginning of Winter; when the Hands being tender are exposed unto the Cold, whereunto they have not as yet been accustomed; whereupon it is that they contract these Clefts, especially about the Joynts; yet nevertheless, this same happeneth sometimes likewise unto the Feet.

It may be Cured most speedily, and most conveniently by this Unguent.

Take Liharge of Silver, Myrrh, and Ginger, of each alike parts; bruiſe and powder them very small; and so with Virgins Wax, Honey, and common Oyl as much as wil suffice, make an Unguent; unto which (for the rendering it the more grateful to the ſmal) Musk and Ambar may be added.

THE



THE  
FIFTH BOOK.  
THE  
FOURTH PART.  
Of WOUNDS.

Chap. I. Of the Nature, Causes,  
and Differences of a Wound.

Among the external preternatural Affects of the Body, and such as are obvious unto the senses, there remain Wounds, Fractures, and disjoyntings; of which we will now speak in order. And

First of all, as touching a Wound, that it is a solution of Unity in a part, Bone, and softer Cartilage, is without all doubt and controversy. But yet nevertheless it is sometimes taken largely, and sometimes in a more strict sence. *Celsus* taketh it in the largest sence of all, when (in his fifth B. and sixth Chap.) he thus writeth: That Wound (saith he) is far worse, and more dangerous, which is caused only by a Bruise, then that which is made by incision and dividing the part; so that it is also far better to be wounded by a sharp and keen edged Weapon, then by that that is blunt. It is taken in a large acceptation, when it is attributed unto all kind of solution of Unity made by any sharp instrument; whether this solution be made by pricking, or by cutting; like as *Galen* (in his Sixth B. of the Meth. of Physick the first and following Chap.) calleth the pricking of the Nerves the wounding of them. It is taken strictly, when it is distinguished from a pricking; that a wound is the solution of Unity in a soft part, made by a Cut from any keen and cutting instrument; but a pricking is that solution of unity that is caused in a soft part, by a prick from an instrument that is cutting. By which it appeareth, that the solution of Continuity in a soft part is wider and broader then a Wound, whether it be made by cutting, or by pricking. For Unity may also be dissolved (in a soft part) by a thing that is not sharp, but only hard and heavy; and this may be, the Skin either appearing whole, or even broken likewise, which happeneth in those

Wounds that are inflicted by Bullets from Guns, Moreover also the Unity of the soft part may be dissolved by extension, which (in special) in the similiary parts is called Rupture, but in the Compound, *Apoplasia*; to wit, when those fibrous Ligaments and Threads (by which the parts are fastned together, the one to the other,) being broken, the parts themselves likewise become broken. By all which it appeareth, that a Wound is the solution of Unity in a soft part, caused by a cutting and sharp instrument.

But if (as *Guido* in the Second B. of his Chirurgery; and *Fernelius* in the seventh B. of his Meth. of Physick, Chap. sixth, rightly admonish us) the Wound become sordid and foul, and that some thing be by the Pus or filthy corroding matter eaten away from the substance of the wounded part, then the Wound passeth into an Ulcer; or certainly we may very well say that an Ulcer is conjoynd with the said Wound. The truth indeed is, that *Rudius* (in his B. of Wounds, and first Chap.) doth impugn this Opinion; but all to little purpose. For neither is it absurd (as he without Reason thinketh) that one Disease should be changed into another; or that one should be added and joyned to another.

The Wound and Ulcer they are both of them the solution of Unity in the soft part; but the Wound is made by section or cutting alone, whereas the Ulcer is caused within it by Erosion; and therefore it is that in an Ulcer there is somewhat that is lost from the substance of the part. If therefore in a Wound of any part something shall be Eaten away and consumed from the substance of the flesh, it is then altogether to be granted, that now there is likewise present even an Ulcer also. Which nevertheless is not to be taken, as though so soon as ever on the fourth day the Pus or filthy corrupt matter doth begin to appear in the Wound, that then likewise an Ulcer may be said to be present. For that said Pus proceedeth from the blood that is shed forth without the Veins; or some Aliment that Ricketh in the Capillary Veins, and spaces of the parts; neither is there then any thing Eaten away from the substance of the part. But if there be so great an abundance of the Pus gathered together (whatsoever the Cause thereof be) that something be Eaten away from the substance of the part; then it cannot be denied but that there is an Ulcer likewise present; seeing that there are then present all things that are required unto the Essence of an Ulcer; and in this Case, the Cure is no longer to be ordered as in a single and simple Wound, but as in an Ulcer.

But since that a Wound is to be accounted in the number of Diseases, there may be enquiry made (and that upon good grounds) what actions they are that are hurt thereby. Unto which it may be rightly answered, that all the Actions of the said part, and the severall uses thereof unto which the part is destined, are hurt by the Wound, whether that part perform those actions, either as a similiary, or as an instrumental part. That the Organical Actions may oftentimes be hurt by a Wound, (to wit, when the part destined for motion is Wounded) cannot be denied, it being a thing so manifest; since that the wounded Member can no longer be moved in a due and right manner. As likewise the Vein that is cut assunder can no longer convey the blood unto the part, for the nourishment thereof; neither a dissected Artery the vital blood and spirits, or a Nerve the Animal Spirits.

But indeed the truth is that the temperament of the part is not next of all and immediately hurt by the Wound; but yet nevertheless it is mediately hurt; to wit, when the Vessels being cut assunder, and the blood poured forth, the heat of the part is withal dissipated, and the influx of the Blood, spirits, and heat flowing in (this last being so necessary and requisite unto the temperament of the part) is altogether hindered. For all which Causes, the attraction of the part, the Concoction, the Nutrition, and the expulsion, is hurt. And from hence it happeneth, that the temperament being changed, there are more Excrements generated in that part, then otherwise were wont to be. And from thence also it proceedeth, that the Pus is not presently generated in the very beginning of the Wound, but afterward, to wit, about the fourth day, when the heat of the part that was dissipated is again restored.

The Use is likewise hurt in the Wounded parts. The Skin being Wounded can no longer cover the parts lying underneath it; neither the dissected *Peritoneum* the Intestines; the Cornea Tunicle of the Eye can no longer contain the Humors; neither can the Arteries when they are once cut in sunder any longer contain, or convey the Blood; neither can the Nerves carry the Animal Spirits.

#### (De W.) The Differences.

The Differences of Wounds, some of them are Essential, and others of them Accidental. The Essential are taken from the very Nature of the Wound, to wit, from the form thereof; in which respect, according to the Figure, some of them are straight, other of them oblique, and these indeed likewise of a very va-

rious Figure: in respect of their Magnitude, some of them are small, and others great; some deep, others of them only superficial; and hither also may this be refer'd, that a wound being inflicted, either there is somewhat cut off from the substance of the part, or else there is not any thing at all cut away. Although (if we would but rightly and accurately Judge of the thing) these are no proper and Essential Differences, in regard that they are taken not from the very Essence of the Wound, but rather from some certain Accidents that happen thereto, to wit, the greatness, the figure, &c. From the part affected, (which is sometimes the Musculous Flesh, sometimes a Nerve, now and then a Ligament, and very often a Tendon) now this, or that part is affected. And indeed in one and the same part, there is great respect to be had, in what part of the part the wound is; as for example, whether the Wound be in the beginning, or in the end, or else in the middle of the Muscle: and whether or no in the Wound of any Bowel, the *Parenchyma*, or the Vessels therein be wounded. From the Cause, because that the wound inflicted is either by cutting (which is in special called a wound;) or by pricking, which in special is called a puncture or pricking; or else together with the pricking there is likewise present an incision; or else there are present together an incision and contusion; or else all these three, incision, pricking, and Contusion, are joyned together.

But the Accidental Differences are such as are drawn from those things that are without the Definition of the Wound. *Galen* (in the Third B. of his *Metb. of Physick*, and last Chap.) hath reduced them to three Chapters; and he teacheth us that they are taken either from the manner of their Generation; (to wit, that there is a total incision, or a total disruption;) or else, that there is only a part cut, or a part broken. Secondly, From the situation of the Wound, to wit, when in a wound obliquely inflicted, one part of the Wound is in sight, and another part lieth hid under the Skin. And Thirdly, From the time, that one wound is fresh, and new made, another old and inveterate.

There are likewise certain other Accidental Differences (we may rather call them improper) taken from those things that are conjoyned with the Wound; to wit, that the wound is poysonous that is inflicted by a poysoned sword; or else by the biting of some venomous beast: that there hath chanced unto the wound some inflammation, or an *Erysipelas*, or that there is a Fracture, or disjoyning joyned therewithall: or else that there is conjoyned an Hemorrhage, Pain, or some other Symptom.

The

*The Causes.*

We need not say much touching the Causes of Wounds. The Causes of a Wound that is made by cutting, are all those things that have in them a power of Cutting, Swords, Glass, and the like. Of a Puncture (or pricking) the Causes are, whatsoever things are sharp-pointed, as Arrows, Needles, and the teeth of living Creatures. Of Ruptures, such things as distend the soft parts, and pul them into Contrary parts; such as the lifting or carrying of some extraordinary weight, a Fall, Blow, loud speaking, and the like. Those things that bruise, are all things Heavy, Hard, and Blunt, as Stones, Wood, Lead, and among these Leaden Bullets shot out of Guns have in them a power of perforating.

*Chap. 2. Of the Diagnostick Signs.*

**T**HE Truth is, that the wound it self is (of it self) sufficiently manifest unto the sense; and therefore needeth not any signs whereby it may be known. But although that place in the Skin that is wounded be obvious and open to the sense; yet nevertheless if the Wound penetrate unto the more inward parts, what parts they are that are wounded within is oftentimes very obscure, and hidden from us. But this may be known, first from the situation of the parts; Secondly from the Action that is hurt, and the Use. Thirdly, From the supervening Symptoms; and Fourthly, from the Excrements. For if the wound of the Head be so inflicted that it be very deep, it sheweth that the Brain is wounded: and if the whole Thorax or Chest be run through with a Sword, it argueth that the Lungs are likewise wounded; and so of all the other parts. For the exact and perfect knowledge of which, the Situation of the parts is to be learnt from Anatomy. Secondly, the Actions that are hurt do demonstrate the Wounded part. And so, after a Wound received in the Privy parts, if the Urine flow forth of its own accord, it sheweth that the Sphincter of the Bladder is hurt. But here notwithstanding, we are wisely and carefully to consider, (in case any Action be hurt) whether the hurt of the said Action be not by Consent of some other part. And therefore other Signs are to be conjoyned. If (a wound being received in the Abdomen,) the Intestines fall forth, it is an Argument that the Peritonæum is cut asunder.

As for what concerneth the Excrements; if Chyle flow forth upon the receiving of a Wound; it is a sign that the Stomach is wounded, or the small Bowels; if the Excrements

of the Belly, that the greater and thicker Intestines are wounded; if Urine flow forth of the Wound, then it sheweth that the bladder is wounded; if out of the Wound of the Thorax (or Chest) Air pass forth, it is a sign that the Lungs are wounded. Whether it be a Vein or an Artery that is hurt and wounded, the efflux of the Blood will shew; since that, what floweth forth from an Artery cometh forth Leaping and Dancing, as it were, and is more Red then that from the Veins.

We have notice likewise given us of the part that is wounded from the supervening Accidents. And so a vehement pain suddenly happening manifesteth that some Nerve is wounded.

*Chap. 3. Of the Prognosticks, and foretelling of the Event of Wounds.*

**B**EFORE the Physician attempt the Cure of a Wound, he ought First to be very Sollicitous and Inquisitive touching the Prognosticks. To wit, in the first place, he ought to foreknow, whether the Wound be Curable, or altogether incurable. And then if it be indeed curable, whether the Cure will be easie, or difficult; and whether or no the wounded person be like to have his former perfect soundness restored unto him; or else whether or no being Cured, and his Wound healed, he be likely to undergoe and suffer the hurt Action of some one or other of his Members. For so oftentimes it happeneth, that some Tendon being cut asunder, the motion of some part is wholly lost; and that the Brain being wounded, the Memory, or Rational faculty is thereby hurt: and Moreover, whether the wound be likely to be Cured in a short, or whether it will take up a longer time. But on the other side, if the wound be altogether incurable; whether it be Mortal, and such as is likely to hasten Death; or else whether it be not more probable that it will degenerate into some long continuing Ulcer.

And Lastly, it must be foretold likewise, whether the Changes and Alterations of the Wound will be for the better, or for the worse, and when these Changes will be. Now in the first place, it must be diligently explained,

*What Wounds are Deadly, and what Wounds are not so.*

For indeed this Question is of very great Moment, and therefore most diligently and exactly to be weighed and known by the Physician. For whereas oftentimes the lives



of some men are much hazarded and endangered, (when they are brought before the Magistrates in the publike Courts of Justice) by Reason of Wounds they gave unto others; and that oftentimes the Judges desire the Physitians Opinion touching the same; great Care and a diligent Endeavour ought to be used, that the Physician give so true a Relation, and so distinctly deliver his Opinion touching the quality of the said Wounds, that the innocent may not be condemned, nor the Guilty acquitted.

But in the first place we are to know that not every Wound which hath Death following it is to be called a Mortal wound, but that alone which in its own Nature bringeth Death. Now such like wounds are twofold. For Mortal or Deadly (as *Galen* in the 5. B. of the *Aphor.* 2. and *Aph.* 18. teacheth us) is sometimes taken and understood of those wounds that are of necessity deadly, and sometimes again of such Wounds as are so for the most part, as *Hippocrates* speaketh; and such as by Reason of which (as the same *Hippocrat.* maketh the limitation in the 18. *Aphorism.* 6. Sect. in *Cocis*, or his tract of Playsters) those that are wounded, almost, or for the most part die: like as *Galen* (in his 5. B. *Aphor.* 2.) writeth, that Deadly is to be taken for that that is dangerous, and is oftentimes terminated in Death. But the Question is here especially of the former kind; for that wound that hath been at any time Cured in others cannot be taken for a wound simply Mortal and Deadly. But we shall afterward tell you, when it is to be taken and accounted for Mortal, or not Mortal. And therefore, Secondly, Wounds cannot be accounted simply Mortal, whereupon the supervening of most grievous Symptoms (which said Symptoms notwithstanding do not always and necessarily follow upon the reception of these like wounds) the wounded person dieth; as when in the Wounds of the Joynts, and the Nervous parts, an inflammation, Deliry, and other Symptoms happen; or that by Reason of a Cacochymy lying secretly in the Body a fever is kindled upon occasion of the Wound. And it is altogether most true, that many things often fall out that render Wounds incurable, which in their own nature were curable. Like as neither are those to be accounted for Wounds simply Mortal, the Curing of which is long protracted, & by Reason of which at length happeneth that the Wounded person perisheth by a slow and lingering Death: the same that happeneth when (the Lungs being Wounded) an Ulcer and the Consumption follow thereupon; or the Thorax, or Stomack being wounded; which oftentimes after a long space of time

become the Causes of Death unto the wounded person. For whenas it hath been observed and known that these like Wounds have been healed in others, they cannot then be accounted for Wounds simply Mortal. But those Wounds are only to be reputed simply Mortal, which in the space of a few hours, or daies, do necessarily bring Death unto the sick person, and cannot be cured by any Art. And therefore we are to distinguish between Wounds Mortal, and Wounds incurable. For all Mortal Wounds are incurable, but all Wounds that are incurable cannot be said to be Mortal. For Wounds incurable (as we have told you) are all those that though they cannot indeed be cured, yet notwithstanding they are not suddenly the Cause of Death unto the wounded person, since that (although they cannot be healed) yet nevertheless the sick person may after this live not only many Weeks but even yeers also. And such a like Wound was that which *Matthias Cornax* (in his *Epistle Responsory unto Dr. Egidius Hertrich.*) and *Julius Alexandrinus* (in his *Annotations upon the sixth Book of Galen his Meth. of Physick Chap. 4.*) have described untous. For whenas a certain Bohemian Boor (as he was hunting) received a Wound in his Stomack with a broad hunting spear, it could not possibly be consolidated but yet in tract of time the lips of the wound became hardn'd by a certain Callousness growing over them, so that the wounded person survived for many yeers after; and by applying of an instrument he could at his pleasure evacuate his stomach.

And now in the next place let us see what Wounds they are that we may account to be simply Mortal, or Deadly. And now whereas Death happeneth upon the defect & extinction of the Native heat; and that the Native heat may in a twofold manner be extinguished, either sensibly and by degrees, (as it is in a Natural Death, and long continued Diseases, as the Consumption, and the like,) or else suddenly and violently: the latter way it is that Wounds are said simply and necessarily to bring Death unto the wounded person, to wit, a violent one.

Now the innate heat is extinguished, either because the vital spirits are dissipated, or because they are suffocated. And therefore all Wounds that are Mortal, and of necessity cause a sudden and violent Death, either they suddenly suffocate the vital spirits, or else they dissipate and corrupt them. But in regard that the Heart is the Store-house of the vital spirits and the Native heat, first of all therefore the Wounds of the Heart of all others do especially and most speedily bring upon the Wounded Person a violent Death.

And

And the very truth is (as Galen writeth in his 5. B. of the places affected, and 3. Chapter) if the Wound penetrateth unto the ventricle of the Heart, (especially the left) the wounded person of necessity dieth suddenly: but if the Wound penetrate not so far as unto the ventricle of the Heart, but that it consist in the substance thereof, the man may then indeed live for a while, but yet nevertheless he must necessarily die this violent Death.

Secondly, It is of necessity that the man die, if some Vessel be wounded in that part of the Lungs that are next unto the Heart, and that out of it store of Blood be poured forth unto the Heart, overwhelming it, and suffocating the heart thereof.

Thirdly, All the internal wounds of the greater Vessels that cannot by any art be closed up, in regard they cause (the Blood being plentifully poured forth either out of the Veins or the Arteries) that the spirits be suddenly dissipated, therefore of necessity they speedily suffocate the wounded person.

Fourthly, All those Wounds are said to be Mortal that suddenly take away the Respiration, and hinder the ventilation of the Heart, so that the Native heat of the Heart is suffocated, and so cause that the Man die even almost in the very same manner as Apoplectical persons are wont to die. And such like wounds are especially the Wounds of the Brain, but yet not all of them, since that there are many Wounds of the Brain that are not Mortal, as afterwards we shall shew you, and as we have already told you in the first B. of our Practice, first part, and 23. Chapter. But those great Wounds, and such as are the Cause that the Animal spirits be suddenly dissipated, or that the blood being poured forth of the Vessels the Orifice of the Nerves be quite stopped, and so by this means the influx of the Animal Spirits be hindered; or that from the same an inflammation of the Brain, or a fever be excited. And this is not only done by the Wounds of the very Brain it self, but likewise by the strokes and vehement Contusions of the Head, by which the Vessels of the Brain (and those neer about it) are broken, and the Blood poured forth of them unto the beginning of the Nerves, and there subsisting hinder the influx of the Animal Spirits. And this may also happen, if the Sinus or hollow places of the Brain chance to be hurt, so that out of them blood be poured forth unto the Basis of the Brain; and so it is likewise in the Wounds of the Eyes, if they penetrate so deep that they open either the Vessels of the Brain, or those that are in the Basis thereof, or those that are neer about the said Basis of the Brain, and so that the Blood poured forth unto the Basis of

the Brain hinder the influx of the Animal spirits by compressing the beginning of the Nerves. For although that the Blood (if it be poured forth above upon the Brain) may possibly be emptied forth by perforating and opening of the Cranium or Skul; yet nevertheless if it be poured forth unto the Basis of the Brain, it is impossible that it should ever be evacuated.

There seemeth yet (nevertheless) to be another way, whereby the Blood poured forth into the Brain, or about the Brain, bringeth Death within a very few daies, if it cannot be evacuated. For when as it is without the Vessels, it beginneth to putrefie usually about the fifth day; from whence feavers, deliries, and Convulsions are excited; so that the man dieth in the same manner almost as one in a Phrensie.

That which is done by the Wounds of the brain, the very same happeneth likewise from the spinal Marrow, if it be indeed wholly cut assunder in the superior part thereof: for then the motion of all the inferior parts (and so of the Thorax likewise) is abolished, and the wounded persons are suffocated. And unto one of these four waies I conceive that all kinds of Mortal Wounds may be referred. And therefore if a Wound penetrate into any interior part of the Body, so that thereupon the wounded person die within a short space of time, we are then to Judg that that Wound was Mortal; and if diligent inquiry be made, I am of Opinion that it may be referred unto some one kind or other of these Mortal Wounds: whether that Wound hurt the vital faculty it self immediatly; or else hurt it by the intervening of some other Disease, or Symptom. For, as *Nicolaus Boetius* writeth out of *Felinus*, (in his 323. Decision, Numb. 10.) it is all one, whether a Wounded man die of his Wound, or of some infirmity caused by the same. Which yet nevertheless is so to be understood, if the Wound necessarily attract that Disease, or that Symptom which is the Cause of Death.

But as for all the other Wounds whatsoever that cannot be referred unto some one of these manners, I conceive that they cannot simply nor necessarily be accounted Mortal. The which that it may be made the more plainly to appear, we have it now in our purpose, in special to weigh and discover unto you the Wounds of all parts that are to be accounted Mortal.

Now *Hippocrates* Judgeth the wounds of seven parts to be Mortal, whilest (in his sixth Sect. Apbor. 18.) he thus writeth. *Who-soever hath his Bladder cut through, or his Brain, or his Heart, or his Midriff, or any*

*What Wounds accounted Mortal by Hippocrates.*



of his *mal Guts*, or his *Stomack*, or his *Liver*, that *Wound is Mortal*. Which *Aphorism* notwithstanding (in his *Coaca*, or his *Traict of Playsters*, *Aphor.* 509.) he both *Limiteth* and *Amplifieth*, when he thus saith. From a *Wound* even *Death* itself may almost happen, if any one be wounded in his *Brain*, or in his *spinal Marrow*, or in his *Liver*, or in his *Midriff*, or in his *Heart*, or in his *Bladder*, or in any one of the greater *Veins*. *Death* likewise soon followeth, if any extraordinary great *Blows* be inflicted upon an *Artery*, and upon the *Lungs*; so that the *Lungs* being wounded, the *Breath* that passeth out at the *Mouth* is less then that which issueth forth at the *Wound*. But they suddenly perish, whosoever they are that have received a *Wound* in the interior *Nerves*, whether *mal* or *great*; if the *Blow* or *Wound* be both *Transverse* and *great*: but if the *Wound* be but *mal* and straight there are some that escape the danger. But there is neither *Death* nor any great danger impending from those *Wounds* that are inflicted on those parts of the *Body*, in the which there are none of these, or which are as far distant as may be from these.

Indeed he limits the *Aphorism*, whilst that he doth not simply write that such like wounds are altogether *Mortal*, but *almost* and *for the most part*. He amplifieth it, whilst that he addeth the *spinal Marrow*, the greater and thicker *Veins*, the rough *Artery*, and the *Lungs*, and the interior *Nerves*. And therefore we will in order consider the wounds of these parts. For it is without doubt, that the *Wounds* of the rest of the *Parts* are not at all of themselves *Mortal*: and this *Hippocrates* himself teacheth us in the above mentioned *Aphorism*, 509. in *Coacis*. *Celsus* (in his 5. B. and 26. Chap.) thus rendereth the foresaid Opinion of *Hippocrates*. He cannot possibly be preserved, that hath the *Basin* of his *Brain*, his *Heart*, his *Stomack*, the parts of his *Liver*, the *Marrow* in his *Back-bone*, wounded: or that person that hath either the middle of his *Lungs*, or the *Jejunum*, (i. e. the hungry Gout) or any of the smaller *Guts*, or the *Stomack*, or the *Reins* be wounded; or be that hath the greater *Veins* or *Arteries* about his *Jaws* cut assunder. And they also very hardly recover their former soundness that have any part of their *Lungs*, or the thick part of their *Liver*, or the *Membrane* that containeth the *Brain*, or the *Spleen*, or the *Matrice*, or the *Bladder*, or any *Intestine*, or the *Midriff*, wounded. These likewise are in extrem great danger, in whom the *Swords* point hath pierced even unto the greater *Veins* that lie hid and concealed within, in the *Arm-pits*, or in the *Hams*. And those *Wounds* are also dangerous, wheresoever there are any of the greater *Veins*; in regard that they

soon spend a man by the extraordinary effusion of *Blood*. And this happeneth not only in the *Arm-pits*, and in the *Hams*, but likewise in those *Veins* that reach even unto the *Arse*, and the *Stones*. And besides these, that *Wound* is also evil and dangerous that is in the *Groins*, or in the *Thighs*, or in the void places, or in the *Joints*, or between the *Fingers*. As also whatsoever wound it be that hath hurt any *Muscle*, or *Nerve*, or *Artery*, or *Membrane*, or *Tone*, or *Cartilage*. But now, because that *Hippocrates* what he had said (in the sixth B. of his *Aphorism* *Aphor.* 18.) to be *Mortal* and *Deadly*; that in his *Coaca*, *Aphor.* 509. he explaineth by saying that they almost die, let us therefore see what wounds of these parts are simply *Mortal*, and what not.

And first of all, *Hippocrates* (in the Sixth Book of his *Aphorism* *Aphor.* 18.) reckoneth up the *Wounds* of the *Brain* among the *Mortal* *Wounds*; and yet nevertheless (in his *Coaca*) he limits it, and writes that for the most part this is so. For all the *Wounds* of the *Brain* are not *Mortal*. For *Galen* himself saw when such *Wounds* were Cured, in the 8. B. of the *Use of the parts*, and 10. Chap. and in the sixth of the *Aphor.* *Aph.* 18. And we have instances thereof in *Valleriola* in his 4. B. of *Observat.* and 10. chap. and in his 5. B. of *Observ.* chap. 9. and in his sixth B. of *Observ.* ch. 4. in *Gulielm. Fabricius* his 4. Cent. *Observ.* 1, 2, and 3. and he there giveth us a long Catalogue of the *Physicians* who had seen some *Wounds* of the *Brain* Cured. In *Johannes Andreas a Cruce*, in his first B. of *Wounds*, *Traict.* 2. chap. 14. of a hurt and wounded *Brain*. Yea Moreover it hath been observed, that after the loss and perishing of some small part of the *Brain*, yet nevertheless the wounded person hath perfectly recovered: for the confirmation of which we have many *Histories* given us by *Divers Physicians*; *Anton. Musa Brasavolus*, in his Comment. upon the 18. *Aphor.* of the sixth Sect. of *Hippocrates*, *Nicolaus Missa*, in his first B. *Epist.* 11. *Fallopium* in his *Traict of the Curing of Wounds*, chap. 45. *Franciscus Arceus*, in his first B. of the *Curing of Wounds*, and 6. chap. *Johannes Andreas a Cruce*, in his first B. of *Wounds*, *Traict.* 2. chap. 14. *Ambrosius Paracelsus* in his 9. B. and 22. chap. and others; all which (or at least the greatest part of them) have been collected by *Schenckius*, in his first B. *Observat.* 40. and 42. And well worth *Observation* also are the *Histories* of the most dangerous *Wounds* of the *Brain*, that are extant in *Cabrolus* his *Observat.* 16, 22 and 34. in *Henricus Petrus* his 2. Tome of *Harmonic. Disputat.* *Disput.* 36. *Quest.* 10. in *Gulielm. Fabricius*, every where very frequently in the



wounding of the Heart did long survive. For although it hath indeed been observed, that Tumors and Ulcers have been found in the Heart; yet those seeing that they arise and grow by degrees, life may sometimes for a while persist together with them; although that in the conclusion even these also bring Death unto the Party. But wounds, in regard that they suddenly disturb the very frame and Oeconomy of the Heart, the life cannot therefore long persist with these. And albeit Galen (in his 2. B. of the Decrees of Plato and Hippocrates, and 4. Chap.) relateth that sacrifices at the Altar (after the heart hath been cut forth) have been heard to cry: yet notwithstanding this lasteth so long only as the vital spirits are remaying in the Arteries; which being exhausted, soon after the Beast falls down and dieth. For (as Aristotle writes in his 1. d. B. of the parts of Animals, and 4. Chapter) the Heart alone of the Bowels, and of all the parts of the Body, will not admit of, or bear any great injury; and this for very good Reason. For when the very principium or principal part of all is corrupted and injured, it cannot then possibly afford any aid and assistance unto those other parts that depend thereupon. And more especially (as hath been said) the left ventricle of the Heart (which is the storehouse and treasury of the Blood and the vital Spirit (being wounded, the wounded person immediately perisheth. But if the right ventricle of the Heart be wounded, that the wounded person may in this case lengthen out his life for some short time is confirmed unto us by a strange (but yet true) History that we may finde written in a Table hanging up against a Wall in the Library of the University of Groning; and as it is described by Gothofredus Hezenitius in Itinerario Frisic. Hollandico, Page 16. in these very Words.

### Nicholaus Mulerius, health to the Reader.

It hath hitherto been beleev'd, that the heart being wounded no man could possibly lengthen out his life, no not for the short time of one hour. Which opinion both Reason and Experience confirm. For seeing that our life dependeth upon the safety of the spirits (whose Store-house and Fabrick is Situated in the very Heart) the Heart being wounded, the said treasury and fabrick that is Situated in the same must of necessity be wounded likewise. But I thought good here to relate unto you a very Memorab'e History; a History (I say) of a certain Soldier, who being wounded at the Heart, yet lived above fifteen daies after; the like whereunto we meet not with in any of the observations of either Ancient or Modern Physitians. Andreas Hackevanger, being a Soldier enroled in the

City Garison under the most Illustrious Count William of Nassau, (Chief Governour of Frisia, Groning, Omland, &c.) received a wound in his breast from a fellow Soldier of his, in the year 1607. the two and twenty day of August, in the evening; and he died the eighth day of September following, an hour after Sun-rising; it being the sixteenth day from that whereon the wound was given him. The Body of this dead Soldier by the command of the Governour of the City Garison, for the discovery of the Nature of this his wound, was opened and examined by my self and two Chirurgeons, Gaspar and Luke Hulten, there being present and looking on that valiant and most Noble Bernhard Hoornekeus; there looking on likewise some others both of the meaner and better sort of Soldiers. We had no sooner opened the Cavity of his Breast, and emptied forth no small store of purulent matter that stank not much, but bebo'd, we found to our great admiration, that the Wound had penetrated even into the right ventricle of the Heart; and that the aforesaid part of the Heart was almost all of it withered and wasted away, the left part stil abiding safe and entire; in which is contained the Primary Store-house and treasury of the vital Spirits. And therefore by the benefit of this alone the life of this Soldier was preserved even unto the sixteenth day, in the morning. And lest (haply) that this relation should not be Credited by some, the most Noble and Illustrious persons before mentioned (Bernhard Hoornekeus, Governour of the City Garison, and Petrus Pappus, the Military Praetor,) have confirmed the same by their Testimony and the subscription of their Hands. And the latter of them hath likewise made an exact narration of this History, in his learned Commentaries upon the Military discipline. Done at Groninga the 22 day of June, in the year; 1627.

I Bernhard Hoornekeus do attest what is above written: this 22 of June, 1627.

I Petrus Pappus von Tratzberk do attest, that this History is true; and that I my self very well know it to be so.

And therefore what is related by Matthias Glandorpius, in his Speculum Chirurgicum, Chap. 23. touching Sanctorius a Professor at Padua, that struck a Coney through the Heart with a sharp instrument, the Coney still remaining alive for many Months after; this without doubt being to be understood of the right ventricle of the Heart; it happening withal likewise, that the instrument

(out of all question) was not broad, but narrow and sharp-pointed.

*Wounds of  
the Lungs:*

Fourthly, The Wounds of the Lungs, Hippocrates indeed reckoneth them up in the number of those Wounds that are Mortal, in the place before alleadged, in *Coacis*; and yet nevertheless he doth not absolutely and simply pronounce all the wounds of the Lungs to be Mortal, but he himself addeth a Limitation; to wit, this, if the wound shall be so great, that the Lungs being Wounded there passeth forth less of the breath by the Mouth, then there issueth forth of the Wound. And that all the Wounds of the Lungs are not Mortal, we are oftentimes taught by experience; which evidently confirmeth it unto us, that many who have been wounded through the whole Thorax, and the Lungs, have yet notwithstanding escaped with their lives, and recovered their former health and soundness. And I my self saw an example of this in a certain Student, who in the year, 1623. in the Month of July, in the night received a wound, by a narrow sharp pointed Sword run through his Breast on the right side thereof, about the Third short Rib, neer unto the Arm-pit, and coming forth opposite unto it neer unto the Spina; so that he sent forth by the wound much Breath, with a great noise; and yet notwithstanding this man recovered, and was well again within the space of a month; and even now also. (in this year, 1634. wherein I am writing these things) he is in good health and strength. Yea, *Gulielmus Fabricius* (in his 2 Cent. Observat. 52.) out of a History imparted unto him by one *Abel Roscam* (which is as followeth) telleth us of the Cure of a wound in the Lungs that was far more dangerous then the former. The story is this. There was (saith he) among the Delphiniates, in the town of Calmuntium, a certain person grievously wounded in his Breast (the wound being made by the prick of a Sword) betwixt the fifth & sixth ribs of the breast, not far from the Sternum or Breast bone; in whom when the Sword by its broad point had lightly pierced through even the very Lungs, in the drawing of it forth, I know not by what ill chance it being turned round it brought forth along with it through the wound a small portion of the Lungs; whereupon immediately all the standers by adjudged the Wounded person to be at the very point of Death. In the mean time, the Physician (together with a Chirurgeon) being sent for, so soon as he was come, instantly commanded that the part of the Lobe of the Lungs that hung forth, (being first well washed in Wine) should again be thrust back into the Breast. But in the handling thereof, perceiving that it

be cut off with a red hot Iron Instrument. But as for the Rest of it, the Chirurgeon gently thrust it back again into the Breast, the Ribs being first dilated with a Wooden wedg that was instantly provided for that very purpose. And then after this, by the Art and Medicaments prescribed by the Physician, he was Cured; there being withal external means administred, and some certain pectoral Decoctions of Vulnerary Herbs for a few daies inwardly drunk; and so the wounded person perfectly recovered; and after this lengthened out his life for many years, his Lungs and Breast all the while continuing still very sound, and altogether free from all manner of hurt and detriment. And therefore we may conclude that the Wounds of the Lungs are not alwaies of themselves Mortal, or incurable; unless haply a deep Wound therein be affected with an Inflammation; or else when the Wound hath hurt the great Vessels, or the Lappets thereof; or that the wound reacheth neer unto the Heart. And many other such like Histories *Schenckius* (in the 2. B. of his Observat.) relateth out of *Franciscus Valleriola* his fourth B. Observat. 10. *Nicolaus Massa*, *Franciscus Arceus*, *Fallopins*, and *Forestus*; and the like are to be seen also in *Gulielmus Fabricius* his 3. Cent. Observat. 36. and Cent. 1. Epist. 52. and others: all which here to recount would be too tedious. And the like History is related also by that excellent and expert Physician Doctor *George Horstius*, (in his 3. B. Observat. 11.) in these Words. A certain Noble youth (saith he) *Abraham a Schleinitz* (a Knight of Misna) living with us at Giesla, as a student, in the year, 1613. goeth to the House of a certain Citizen, upon his Birth day, which the Citizen (as it seemeth) was wont to observe in a festival manner; others in the same House by Quarrels and Threats having given an occasion of a Tumult; whither being come through a Chink of the Door he was run through his Body with a very sharp Sword, the entrance of the Wound being not far from the Sternum, about the Third or Fourth superiour Rib, and the Sword going forth again under the Shoulder blade, not far off from the Spina. I being called about the first hour of the Night, found that his Pulse was very weak, and that there was present a difficulty of Breathing; whereupon I had but small hopes of him, as conceiving very great danger to be at hand, by Reason of the grievous hurt of his Lungs, and the great Vessels. But see what happened. A vomiting taking him suddenly (without any means used to procure it) all the grievous Symptoms ceased, and his strength by degrees returned; there being no purulent spittle at all that offered to come forth; his Cough likewise and difficult breathing were not very urgent and troublesome; neither for the first Week

did any heat and thirst very much affect the sick person: in the interim, the wounds being bandled after the Usual manner, there daily flowed forth an indifferent Quantity of well concocted pus or purulent matter. These means being continued unto the second month, and the External wounds being purified and consolidated, the sick person was suddenly taken with a most dangerous suffocation; so that he was in great peril of being strangled by an Asthma as it were; and he was likewise very much afflicted with a cough, Atrophy, and Heetick Fever, until at length the imposthume of the Lungs brake, and with the Cough five or six pints of purulent matter were cast up at his mouth; after which, the exulceration of the Lungs being cured by fit and proper Remedies, the consumption, Fever Heetick, and all the rest of the symptoms remitted, and the Patient was restored unto his perfect health.

To wit, those Wounds of the Lungs are not mortal, in which only the substance of the Lungs is hurt, and not the great vessels; and such as are not so great that they abolish respiration, or suddenly destroy the vital faculty, either by their dissipating the spirits through some notable Hemorrhage; or else suffocating the heart, by pouring out the blood upon the Lungs, and upon the heart. On the contrary, if the wound of the Lungs be great, and that not only the substance of the Lungs, but likewise the great vessels that are therein (to wit, those notable and observable branches of the Arterial vein, and the veiny Artery, be wounded; those wounds are mortal, being such as in which the blood and vital spirit is poured forth and dissipated, or else through the overgreat abundance of the blood the Lungs and heart are oppressed, and the Patient suffocated. Hippocrates (in the place alleadged in Coacis, ) addeth yet another cause of death; which yet nevertheless doth not bring so sudden a destruction unto any person, as those in the former case even now mentioned; where the wound being great, it is not the vessels containing the blood that are indeed hurt, but the great and rough Artery; so that by reason of the largeness of the wound there is more breath that goeth forth by the wound then by the mouth; for then by reason of the sympathy the heart is affected, the vital spirits dissipated, the Lungs and heart by the ambient Air altered and offended. And indeed those wounds of the Lungs bring death likewise, in which either the substance of the Lungs beginneth to be exulcerated, (and that a Consumption is excited) or in which the blood is poured forth into the Cavity of the Thorax, where it beginneth to putrefy, and where it causeth ei-

ther a fever, or an Empyema. But in regard that this doth not alwaies happen, and not at all in some wounds of the Lungs; and that likewise (when it doth happen) there is no necessity that the Patient die; for this cause therefore those wounds of the Lungs are not to be accounted necessarily Mortal. For Felix Platerus (in his 3. B. of Observ. Page 690.) relateth, that a certain person that he knew, falling into a Consumption from a Wound of the Lungs, was yet nevertheless Cured and perfectly recovered. A certain Coffer-maker (sayth he) one of our Citizens, having from a servant of his received a wound very deep in the lowest part of the Thorax by a prick from the point of a knife, by the wound he voided forth a most stinking and loathsome pus or matter (by the ill favor whereof the whole neighborhood was infected and offended, and likewise some certain small parcels of his Lungs, in which the cartilaginous branches of the rough Artery did manifestly appear: which persevering a long time, albeit that he was in a manner wholly wasted away, yet nevertheless at the length the flowing forth of the purulent matter remitting, the wound was closed; and he restored unto perfect soundness; living after this many years as a foot-post, in carrying of letters; and thus he prolonged his life for forty years safe and sound, as we say; although (as it is very probable) he wanted great part of his Lungs in one side.

Fifthly, That the wounds of the great rough Artery (commonly called, Aspera Arteria) are not mortal, but that they may be cured, even the Laryngotomy, or Cutting of the Larynx (of which we have spoken before, in the Second Book of our Pract. Part. 1. Chap. 24.) doth evidently demonstrate: To wit, those of them are cured that are not great, and in which the membranes only (by which the rings of the rough Artery are fastened and linked together) are wounded; examples of which Schenkius (in the Second Book Of his Observat. ) hath collected. And I myself also have twice seen such like wounds cured. But if those very cartilaginous rings be wounded, by reason of their hardness the part cannot again be made to grow together as formerly, as Hippocrates teacheth us in the sixth of his Aphorisms, Aph. 19. And in the seventh of his Aphorisms, Aph. 28. and Galen, in Book 5. of his method of Physick, Chap. 7. And yet notwithstanding such like Wounds do not cause a sudden death, but a slow and lingering one; while that the Lungs are either altered and weakened by that Air that violently breaketh in upon the Lungs thorow the wound; or else that a certain small glob-



bet of flesh grow unto the wound, which by intercepting the breath at the length choaketh the Person. But those wounds alone of the rough Artery throttle the Party, in which the jugular veins and Arteries being hurt the blood violently and alar once rusheth into the Lungs, intercepteth the breathing, and so suffocated the wounded person; which yet nevertheless happeneth not by reason of the wound of the said rough Artery, but by reason of the wound of the Jugular vein, or the soporal (i. e. more plainly the sleep-conveying) Artery, that is very neer unto it.

*Wounds of the Diaphragm.* Sixthly, Hippocrates reckoneth up the Wounds of the Diaphragm among those wounds that are mortal. But Galen (in his Book 5. of the Method of Physick, Chapt. 9. distinguisheth between those wounds of the diaphragm that are inflicted upon the nervous part thereof, & those that are made in its fleshy part; and those he will have to be mortal, but these latter Curable. And yet nevertheless (in the Sixth of the Aphorism. Aph. 18.) he writeth, that the wounds of the nervous part of the Diaphragm are not alwaies mortal; but that the great wounds therein are only so. For then it is indeed that those grievous symptoms plainly appear, viz. a delirium or stupid dotage, difficult breathing, Feavers, Convulsions, and (as Aristotle hath likewise observed in his third Book of the parts of living Creatures and tenth Chapt.) the Sardonic Laughter, wherein the sick persons die laughing. For whereas the Diaphragm receiveth Nerves from the third and fourth vertebra of the Neck, and that these are mingled with those smal branches that are propagated throughout the Muscles that move the Jawbones, and the Lips; if they suffer a Convulsion in that part by which they reach even unto the Diaphragm, they then contract and draw together along with them those little branches of the Muscles of the face; by which the Jawbones, and the lips being in voluntarily moved to and fro, higher and theither, cause a resemblance and seeming appearance of laughter; which Hippocrates (in the 5 of his Epidem.) accounteth among those signs that are deadly, by the Example of Tycho, whom he bringeth in for an instance.

And yet nevertheless, neither are those wounds that are also in the nervous part of the Diaphragm alwaies mortal, so far forth indeed that the party wounded in that place must of necessity presently die: albeie we grant it to be a thing altogether impossible that those who are thus wounded should ever be perfectly cured, or live long in that manner. A notable instance and history of

this (which I have likewise before related, in the second Book of my Institutions part. 2. Chap. 13. and in the second Book of my Pract. Part. 2. Ch. 15. was given me by my Father in law, Doctor Andreas Schato, sometimes Physick Professor in this Univerlity of Witteberg; which I must not here in this place pass over in silence. Take it therefore thus: In the year 1582, the 20. of September, a certain Student, by name Henricus Eufcherhovius, returning out of the lower Saxony unto Witteberg, and much addicted to Melancholy, before the gate ran himself through with his own sword. But yet notwithstanding within two months he was cured of this wound. But the year following, the 28. of April, he began again to be much amiss; and the days following he vomited very often, first a certain water and whatsoever food he had eaten; then after that such things as were green; and at length, on the second of May, his vomitings were altogether black, and that in very great abundance, and so after the last vomit the same second day of May he died. We opened his Body, and there we found that the wound had penetrated thorow the Lungs, and the Diaphragm; and (as it seemed to us) the Diaphragm was run thorow in the Nervous circle. We found very little or nothing of his Lungs on the left side that was run thorow, but only a very smal portion thereof which stuck above unto the short Ribs; the rest of it (no doubt) had gone forth thorow the wound together with the purulent matter. The whole stomach was ascended into the left side of the Thorax; and it had driven the Heart (with its Case,) out of its proper place into the right side; where while he was yet alive, and after the wound was restored unto a good degree of health, he would wish us to observe the motion of his heart by putting our hands there. An instance not much unlike unto this we have in Ambrosius Parus his ninth Book, and Chapt. 30. Of a certain Captain that was (by a bullet shot out of an handgun) wounded and shot quit thorow the Diaphragm, but it was in the fleshy part thereof; who dying eight months after this wound received, we found in his dead body (when we had opened it) that a very great part of the Gut Colon, being puffed and swoln up with much wind, had thorow the wound of the Diaphragm gotten up into his Thorax.

*Wounds of the Stomack* Seventhly, As for the wounds of the Stomack, for the most part they are not to be recounted in the number of the wounds simply Mortal, and which suddenly strangle and destroy a man; since that we have every where exstant examples of wounds in the stomack that have been cured. That History is generally wel known which is related both by Jul-

us *Alexandrius*, in the fourth chapter of his sixth Book of *Galen* his *Therapeutick* method; and likewise by *Matthias Cornax* in his *Epist.* in answer unto *Dr. Egid. Hertogh*; of a certain Bohemian Boor, who received a wound in his stomach, (and that from a broad hunting spear) and yet notwithstanding lived a long while after: this story we told you a little before, and therefore shall say no more of it here. Neither is that other history unknown, of a certain Boor in Bohemia; which as others have related it, so we find it likewise mentioned by *Crollius*, in the preface to his *Basilica Chymica*; in these very words. In the year 1602. at Prague, in the new Town, we saw a certain Bohemian Boor (by name *Matthæus*) about thirty six years old: who for two years together (by an admirable and unheard of dexterity that he had in his throat) would oftentimes in the company of his drunken companions bide in his wide throat (as it were in a sheath) an Iron knife of a fit size, First of all thrusting in the horn haft thereof, with the wonted sleight of a Jugler; drinking upon it a large draught of beer that they gave him for this purpose; and afterward he would pul it back again by the point thereof, at his pleasure, by a singular art and dexterity that he had: but at length (the morrow after Easter) I know not by what unhappy and mad rashness of his he had swallowed it so far down, that it wholly descended into his stomach, and could no more by al his art and cunning be from thence drawn back. And after that (half dead in a manner with the apprehension of death undoubtedly and suddenly to follow) he had lodged in his stomach the said knife seven whole weeks, and two days, by the use and help of attractive emplasters of the Loadstone, and other the like, the point of the knife by a natural impulse began to make its way forth neer unto the orifice of the stomach: which was no sooner perceived by the patient, but he instantly and earnestly requested of the Chirurgeons (who notwithstanding dissuaded him from it, by reason of the extreame hazard of his life thereby) that it might by cutting be drawn forth. Which at the length upon his continual importunate desires (and yet not untill such time as he was come unto a most desperate Condition, both in respect of his poverty and weakness) was yielded unto; and the business undertaken by the principal Chirurgeon both of the kingdom, and that City, *Florianus Matthias* by name, a *Brandeburger*, on the Thursday after the feast of Pentecost, at seven of the clock in the morning; and by him (with Gods assistance) it was happily effected. The colour of the knife after he had cut it forth (it being as long as nine thumbs in breadth) was so changed in his stomach; as if it had layn all

that while in the fire, and was immediately laid up among the Rarities of the Emperour, having been first shewn (a thing most strange, incredible, and miraculous) unto many men, as well Courtiers, as Citizens. And thus this Boor in the space of a few weeks (by the use of fit and convenient remedies, administered unto him by that most expert Chirurgeon) without any further sickness and trouble, alwaies eating well, and drinking, and sleeping (as sometimes he told me himself) by the blessing of God, and the liberal Charity of many people toward him in his low and poor condition, (contrary unto the determinate assertion of Physical Aphorisms) fully recovered his wonted perfect health and soundness, and not long after he married a Wife. But those wounds of the Stomack are especially mortal that are inflicted upon the superiour orifice thereof; in regard that it hath those considerable Nerves that arise from the sixth Conjugation of the Brain, and thereby obtineth a very neer consent with the Brain and Heart; so that it being wounded, most grievous Symptoms may very easily be excited. And *Benivenius* (in his tenth B. of the hidden Causes of Diseases that are curable Chap. 110.) reporteth, that a certain Fuller with one blow of his fist upon the Stomack of a young Man, smote him so violently, that he immediately died thereof.

Eightly, The Wounds of the smaller Guts are by *Hippocrates* accounted and reckoned up among those that are Mortal. And more especially, the wounds of the *Jejunum* or hungry Gut (among al the wounds of the Intestines) are especially Mortal, by Reason of the greatness of the Vessels, and the almost Nervous substance of the Tunicle of that Gut; from whence for the most part there follow great torments and pains of the Intestines, Sobblings, and Faintings; as is to be seen in the Histories related by *Valleriola*, in his 2 B. *Observat.* 8. and 9. And indeed the wounds of the smaller Guts are then most especially incurable, when the said Guts are wholly cut assunder in a transverse manner; since that the Lips thereof standing wide one from the other cannot possibly by any means be Joyned, and made to grow together.

But now the wounds of the thicker Guts are less dangerous, and especially if they be not great: and that oftentimes such like wounds have been Cured, appeareth from the many extant Observations of Physicians: which *Schenckius* (in his *Observations*) bath Collected.

Ninthly, *Hippocrates* likewise accounteth the wounds of the Li-

The wounds of the small Guts.

Wounds of the Liver.

ver in the number of such as are Mortal; which yet nevertheless wanteth a limitation. For *Aegineta* hath truly told us (in his 6. B. and 28. Chap.) that the Liver having been wounded, and a part thereof cut away, yet that the wounded person may be preserved. And *Gemma* relateth (in the first B. of his *Cosmocris.* and 6. Chap.) that a Spanish youth a great part of whose Liver brake forth by the wound of the right Gut, was yet notwithstanding Cured. And *Berrinus* also (in his 13. B. and 7. Chap.) writeth, that a Noble person after a wound inflicted neer about the Region of his Liver, and a small part of the substance thereof drawn forth and cut off, yet escaped; and became sound again. And the same hath likewise been observed by others. *Guilhelmus Fabricius* (in his 2. Cent. Observ. 34.) relateth that a certain *Helvetian* thirty years old, in a Duel, was with an *Helvetian* Sword hurt in that part that is opposite unto the Liver; and that he received a very great wound one span long and that hereupon there was taken from him a good big piece of his Liver. And yet nevertheless this Man (notwithstanding the supervening of most grievous and violent Symptoms) by the blessing of God was perfectly recovered. And *Matthias Glandorpius* (in his *Speculum Chirurgic.* Observ. 34. Page 166.) hath a History of a youth dangerously wounded in his Liver, who yet nevertheless recovered perfect soundness. And yet notwithstanding we say, that they only recover, who have the superficies alone, or the substance of their Liver only wounded, without any hurt at all of the great Vessels. For if there be wounded any one of the greater Vessels, the wounded person cannot possibly escape; and by reason of the large effusion of the Blood, the Man (before that the wound can be Sodered and Agglutinated) dieth. And of these some indeed for a very short time have their life protracted; but others of them die in an instant, or at least, in a very short space. For (as *Hippocrates* in his 5. *Epideim.* relateth the story,) a certain person having had a dart thrust into his Liver immediately the colour of a dead Carcase was dispersed all his Body over; his Eyes sunk in his Head; a difficulty of breathing (together with an astuation or sudden vehement passions) followed after this; and the same day he died. Another Boy being stricken upon his Liver by a Mule, died the fourth day after; and before his Death he was troubled with a short and thick breathing; neither understood he any thing; but all the while (until he died,) lay under a fever.

wounds of  
the Spleen.

Tenthly, The Wounds of the Spleen are almost of the same Nature, and alike dangerous as those

of the Liver. For, if only the *Parenchyma* of the Spleen be wounded without any hurt of the Vessels, the wounded person may possibly escape. But if the Vessels of the Spleen be wounded, such like wounds are not only dangerous, but also deadly and Mortal. For seeing that the Spleen hath store of Veins, and especially of Arteries, these being wounded, by Reason of the great effusion of Blood, and Dissipation of the Spirits, the wounded person must of necessity perish.

VVounds of  
the Bladder.

Eleventhly, The Wounds of the Bladder are likewise found in *Hippocrates* his Catalogue of Mortal Wounds. But yet nevertheless here also a distinction is requisite. For a small wound is soon sodered together by the intervening of flesh, as *Galen* (in the 6. of the *Aphorism.* Aph. 18.) and Experience teach us. But if the whole Bladder chance to be cut quite through (which wound *Hippocrates* calleth *Diacoce*) the Wound is then yet more dangerous. And indeed that is most especially perillous which is inflicted at the very bottom of the Bladder, and the Nervous part thereof: for by Reason of the sharpness and extremity of the pain, the inflammation following thereupon, and the continual feaver, the party dyeth soon after. But as for these Wounds that are inflicted at the Neck of the Bladder (which is fleshy) they are Curable; as we are taught even by the Cutting of the Stone. And yet nevertheless it hath been observed, that the Bladder wounded even in the very bottom thereof hath likewise been Cured; the truth of which we have confirmed unto us by those examples we meet with in the Observations of *Schenckius*. For the whole Bladder is not altogether Nervous, but the Exterior Membrane thereof is more fleshy; whereupon *Hieronymus Fabricius de Aquapendente*, and *Spigelius*, account the said Membrane for the Muscle that shutteth the Bladder. But it is very rare that such a like wound of the Bladder is perfectly Cured, albeit that the wounded person die not thereof; but a Callousness being brought over it, the Pipe still remaineth, by which the Urine is voided forth. But yet nevertheless it is not long that a man can continue to live with such a like wound: and therefore we say here again as we said also before, that there is a difference to be made between a wound Mortal, and a wound incurable. But yet notwithstanding, touching all the Wounds of the bowels hitherto mentioned, this is to be observed; that albeit there have been observed some examples of such like wounds that have been Cured; yet that this hath happened very rarely; and that among these, those are to be numbered, touching which *Averrhoes* saith,



saith, that in the Cure of Diseases there are sometimes Miracles wrought. For when fit and proper Medicaments cannot be applied unto internal wounds, but that the whole work must be committed unto Nature; if in this Case Nature be not very strong and Vigorous, the wounded person is very hardly Cured; but for the most part an inflammation, Convulsions, Faintings and Swoundings, and other the like Symptoms supervening, the party dieth. And therefore Hippocrates saith rightly (in the sixth of his Aphorism. Aphor. 18.) that such wounds are Mortal; and (in his Coaca) that most commonly and for the most part, men die of such Wounds. And therefore if upon the receiving of such a wound, the sick person die within a short time after, the Cause of his Death ought to be imputed unto the Wound; since that much help is not to be hoped for from the Physician, as we shal also anon shew you.

And Lastly, Hippocrates reckoneth up the Wounds of the greater Veins among those that are Mortal, and indeed rightly. But now by the word *Pbleæ* he understandeth both the Veins and Arteries; and by *Pachæ* he meaneth great, and lying hid within; which elsewhere he termeth *Aimorrhous*, that is to say, pouring forth Blood; such as are, the great hollow Vein, and the great Artery, and the great branches of these. For such veins and arteries, seeing that they cannot be shut close by any ligature whatsoever, (the blood and the spirits plentifully flowing forth of them) the strength and powers of the Body are soon dejected; or else the blood that is fallen forth without its own proper Vessels, if it hath no passage forth, but that it be still detained in the Body, it Clotteth together and putrefieth, and getteth unto it self a very evil, corrupt, and Malignant Nature, causeth a Gangreen, and excitech most grievous Symptoms, and at length bringeth even death it self upon the party. And indeed this danger is most grievous and formidable in the Arteries, when the Blood and vital spirits being poured forth the powers of the Body are dejected, and the mans life endangered; neither can the Arteries be easily brought to close, by Reason of their continual motion, and hard substance. And these are the Wounds that (as Hippocrates rightly saith) are Mortal. Of which notwithstanding (as I told you before) some are simply or altogether Mortal: which *Prosper Farinaceus* (Tit. de Homicidis, Quest. 125. Part 3.) defineth, that they are such that require not the Care and advice of Physicians, but are such of which the Wounded person dyeth, that is, by Reason of which (although

they be Cured by all the Art and industry of the most skilful Physician,) yet nevertheless the Wounded person instantly dieth thereof. And others of them are not altogether Mortal, and certain in their causing of death; which the same *Prosper Farinaceus* defineth to be such, of which the Wounded party dieth not suddenly; and of which sometimes he dieth not at all.

But what Wounds of the latter sort are Mortal, that is, of which although some are now and then cured, and recover their perfect health and strength, yet nevertheless this or that particular person may truly be said to have died of them; will indeed plainly appear from what we said before touching the Mortal Wounds of each single and particular part. And yet nevertheless this is likewise to be added; that we are especially to judg by the Event, whether any such Wound be actually Mortal, or not. For although some strong and lusty Boor, or a Man otherwise exactly sound and healthful shall recover of some such wound; yet Nevertheless it will not necessarily follow, that therefore an old person, a Child, a Woman, or any other that is but of a weak constitution, must recover of the like wound; but albeit the former of these was cured of the like wound, yet this latter may necessarily die of the same. But now whether or no such dangerous Wounds be Mortal in this or that particular person, *Nicolaus Boerius* (in his 323. Decision, Num. 11.) teacheth us how we may discover it, by six Conjectures. The first whereof is, the shortness of the time; to wit, if the sick person die very suddenly after the Wound: of which space of time, (albeit there be very many opinions touching it) yet notwithstanding he saith that the principal is this, if the wounded person shall die within three daies after the wound received. But yet however there are some that extend this space of time unto the fifth, or even also unto the eighth day. But others notwithstanding extend this term even unto the eighth month, or a whole year; and this seemeth unto me most probable. And unto this space of time the Mosaisal Law (*Exod. Chap. 21.*) seemeth to have respect. The Second Conjecture is, the persevering of the vomiting, and seaver, and other Symptoms that from the very first signified and threatened death. And this is a right Conjecture, and according to the Opinion of all Physicians, yea even of *Galen*, and *Hippocrates* himself. For those great and mortal Wounds have their Decretory and Critical daies, like as Acute Diseases have; as *Hippocrates* tells us (2 *Prorrhæ.*) in the which good or evil Symptoms are wont to happen. And therefore, if grievous Sym-

toms (such as are Convulsions, Vomiting, sobbings, Dotages, Syncopes, and the like; which otherwhiles also are wont to presage Death in such as are wounded) presently and even from the very first invade the wounded person; or else appear upon him on the Critical day, and after continually persevere, they then signifie, that they were necessarily brought upon the Party by the Wound, and therefore that the Wound is altogether mortal. The third Conjecture is, the breadth and depth of the Wound. For a Wound that is very great and dangerous in it self may yet although it be great, yet not be dangerous, if by it no Noble part be hurt. The fourth Conjecture is, the quality of the instrument with which the Wound is given, and by which the person inflicting the Wound is convinced that he had a will and purpose to kil the party Wounded. But this conjecture concerneth rather the Court of Justice, then the Colledg of Physicians; who inquire not so much after the will and intention of the person wounding, as simply and solely after the quality of the Wound it self. The fifth and sixth, is, the Continual pain, from whence the Convulsion is brought upon the wounded person. But these conjectures belong unto the Second. And thus, whether or no any one die of a dangerous Wound, and of that kind of them which almost alwaies are Mortal, the Physitian out of those six afore said Conjectures, maketh use of two of them especially, whereby he Concludeth that that wound (touching which the inquiry is made) was in it self Mortal and deadly. First, from the shortness of the time that the wounded party lived after his Wound. And then next of all, from the State and Condition of the wounded person, who alwaies (after his Wound) falleth from bad to worse, until his Death; and those grievous and deadly Symptoms, which either presently, or on the Critical day, followed upon the wound, and continually afflicted the sick wounded person. And unto the two former we may not unfitly add likewise a third; to wit, if nothing hath been either committed, or omitted, that might render the Wound Mortal. For from these we may Collect, both that the Condition of the Wound was such, that it might bring death unto the Party; and that the wounded person had such a disposition that was not able to master the Wound. And these in all the afore said particular parts are those Wounds that are deservedly to be accounted Mortal.

As for the wounds of the rest of the parts, *Hippocrates* rightly pronounceth them not mortal; & indeed experience teacheth us, that

sometimes the greatest and most dangerous wounds have been cured; of which there are divers Histories recited by *Valleriola*, in his fourth Book, *Observat.* 10. And there are every where the like extant, in the observat. of *Guilbel. Fabricius*, and the writings of other Physitians. But yet notwithstanding it oftentimes so happeneth that those very wounds of which some have recovered have proved mortal unto some others; and that very many also die of most slight and inconsiderable wounds. And *Hippocrates* (in 2. *Prorrhet.*) writeth, that a man may chance to die of any kind of wounds. Of which we meet with examples almost in every Author. Touching the Child of *Philias*, *Hippocrates* (in the seventh Book of his *epidem.*) writeth, that he died of only the making bare of the forehead bone, a fever supervening for one day, and a certain wan leaden color contracted in the sad bone. And the same *Hippocrates* likewise relateth that the Child of one *Theodorus*, upon the making bare of a bone, (almost of no moment) died the 23. day after. And that a certain person, Master of a great ship, having hurt and bruised his fore-finger on the right hand, and his mouth, with an Anchor, (an inflammation and convulsion supervening) on the thirteenth day following died thereof. And that *Telephanes* also the son of *Harpalus* by his free woman received a blow in the great toe of one of his feet; upon which an inflammation, & a vehement pain followed; which remitting, the sick person fell into a convulsion, and died the third day. And so *Pliny* writeth (in the seventh Book of his *Natur. Hist. Chapt.* 53.) That *Æmilius Lepidus*, Crushing but his thumb against the bedpost, breathed his last. And that *Caius Aufidius* going into the Senate house, only hurting his foot, died of the same ere he could be carried home to his own house. *Petrus Forestus* (in the sixth Book of his *Chirurgic. Observat.* 50.) reporteth that a certain Consul (*Alcmanianus* by name) washing his feet as he was wont to do and endeavoring to cut and pare away the thick Callous skin in the sole of his foot, wounded himself, and that a spasm following upon it, he died immediatly. And oftentimes likewise a Gangreen followeth upon the wounds, and make them deadly. And so *Petrus Forestus* (in the sixth Book of his *Chirurgic. Observat.* 49.) telleth us of a certain person that hurt his Leg by hitting of it against something that was hard, and that upon this bruise and wound of his Leg a Gangrene soon after following took his life from him. And *Guilbel. Fabricius* (in the fifth Cent. of his *observat.*

observat. Obser. 2. ) mentioneth two examples. One of a certain Labourour, who prickt his foot with a thorn; and the other of a woman that with a thorn likewise wounded the very tip of her right forefinger; both which upon the supervening of a Gangrene died. And *Johannes Matthæus* (in his *Physick Quest, quest. 27.*) writeth that at *Frendenberg*, a town of the Dominion of *Nassaw*, receiving but a sleight wound in one of his shoulders, died thereof. And that another in the County of *Oldenburg*, being but very sleightly wounded with a knife in the middle of his Thigh, died immediatly. And that at *Lemgovia* a certain Citizens son, being but sleightly hurt in his Arm by the sword of a Student, (Contrary unto the expectation of all that saw him) died within one hour after. And *Horatius Augurius* (in the first Tome of his *Epist. Book 9. Epist. 2.*) relateth very many histories of them that have perished upon sleight and inconsiderable wounds. And examples to confirm this truth we very frequently meet with in the reading of Authors, and more especially those before mentioned. Now this happeneth for divers Causes, which *Hippocrater* likewise (in 2. *Prorrh.*) toucheth upon in these words. *Whosoever (saith he) would know, concerning wounds, in what manner they shall end, each of them Particularly; in the first place he ought indeed to make a narrow search & strict inquiry into the several kinds of men, which of them are better able to bear out a wound, and which of them are worse able to undergo the same. He ought moreover to know the several ages in which every particular is difficult to be cured; and to be well acquainted likewise with the several parts and places in all kind of bodies, how far forth they differ each from other. He ought also to know even these other things that happen in each of them, of what nature and quality they are, and whether they be good, or evil. For if any one shall know and well understand all these things, he may indeed then likewise know the several events of each particular wound. But he that shall be ignorant of these things can never know what shall be the ends and events of Wounds. I shall reckon them up in this order following.*

Wounds  
Curable from  
what causes  
they are made  
accortal.

For First of all, if the Sword, dart, (or whatsoever it be that inflicteth the Wound) be poysoned, a Wound then that seemeth but sleight in it self may yet bring death.

Secondly, The Idea of Men (as *Hippocrater* speaketh) ought heedfully to be attended; for such as are of a Robust strong body, and sound, these likewise bear and undergoe the most grievous Wounds; and they are oftentimes cured of them without any

great adoe: and although that many times very grievous Symptoms may supervene, inso much that you would judge them even ready to die; yet notwithstanding beyond all hope and expectation they escape, and recover again. And hitherto apperteineth the vitious disposition of the body, and the present Cacochymy. For if any Wound shall befall unto such a like Body, Nature being irritated and stirred up is wont to thrust forth those vitious humors unto the Wound; whereupon other diseases and symptoms happening, that wound which in a sound and pure body was Curable, here becometh Mortal; concerning which *Galen* thus speaketh (in his sixth Book of the *Places affected, Chapt. 2.*) suppose, saith he that one came unto us that had only his skin prickted with a Needle; this Man (if he be one whose wounds are wont to be easily healed) although without any medicament administred, with his Member naked and bare, you send him to his accustomed labour and imployment, will yet take no hurt, nor feel no evil: whereas those whose Wounds are not cured without much difficulty, and that are either Plethorical, or oppressed with vitious Juices; these in the first place feel indeed a certain pain in the Wound; and afterward a part thereof will be infested both with a beating pulse, as also with a Phlegmone: and it is found, that of such like small and sleight wounds oftentimes Convulsions, inflammations, a Gangrene, yea death it self hath followed.

Thirdly, The Age is wel to be considered; in regard of which also there may be a very various Event of Wounds. For those Wounds that are grievous and difficult, yea Mortal, in an old man or a Child, these in a man that is young and strong, are not mortalyea are sometimes accounted very slight & inconsiderable.

Fourthly, A Wound that otherwise is curable may yet become Mortal, by reason that either the Surgeon is wanting; or if he come he chance to prove either negligent, or unskilful: and so by reason of the hemorrhage (in the want of a Chirurgion) whose part it was to stanch and stop it by ligatures, and otherwise, a man may often run a great hazard of his life, although the wound were not otherwise Mortal. And so, if the Wounds of the brain, of the Nerves, of the Joynts, be unskilfully and negligently handled, (an inflammation, Convulsion, Gangrene, and the like evils befalling the Party) the man may miscarry and perish, notwithstanding that the Wound (had it been rightly handled) were in it self Curable.

Fifthly, Sometimes there happen grievous symptoms so suddenly that although both the Physician and the Chirurgion bestir them-



selves with al possible diligence, before these can be calmed and quieted, other diseases and symptoms happen, by which the man is quite destroyed. And therefore oftentimes the very pain in the part wounded (it being of a very exquisite sense) causeth an afflux of humors, the afflux of humors an inflammation, the inflammation a Fever, a Gangrene, and then death. And this indeed happeneth the more easily, if the wound be in a part that is in it self indeed ignoble, but yet such as can very easily draw a part that is Noble into a consent with it.

Sixthly, Both the Constitution of the Air, and the propriety of the place, have here a peculiar power. So the Wounds in the Head that in many (yea the most) places are not Mortal, in other places are Mortal; which yet nevertheless some there are that reckon them up otherwise. *Vidus Vidius* (in his sixth Book of the Cure of diseases Chap. 10. Page 249.) writeth, that at Florence the Wounds of the head are Mortal to most men; and he ascribeth the cause unto the cold thin Air; but that at Pisa and Lions very few die of them, in regard the Air is there thicker and warmer. *Amatus Lusitanus* (in his sixth Cent. Curat. 100.) Writeth that at Florence and Bononia the Wounds of the head are extremely dangerous, but not so at Ragusium. And *Ambrosius Paracelsus* testifieth, that wounds of the head are far more difficult to cure at Paris, then they are at Avignon.

Seventhly, An ill course of Diet may render those wounds deadly that in themselves are not very dangerous: to wit, if the wounded party either eat meats of an ill Juice, be much moved with anger, terrified with fear, Laugh immoderately, and use venery. Examples of this truth, as we meet with them in others, so especially *Guillem. Fabricius* (in the first Cent. of his observat. Obser. 22. and in his 5 Cent. Obser. 75. and in the 1 Cent. of his Epist. n. 1.) reciteth certain of them; as they are there to be seen.

And unto this kind of cause, and in special to a sudden fear and affrightment, or vehement wrath, those wounds are to be referred, that being in themselves but sleight & scarcely considerable, yet notwithstanding many have been known to die of them within the space of a very few hours. For although that the Nerves being pricked and a Convulsion excited, a man may suddenly die; yet nevertheless, in regard that in these there is happening neither any Convulsion, nor yet any other such like grievous symptom appearing; it is therefore credible, that they died by reason of the vehemency of the Passions of Wrath and fear; in regard that these Affects of the Minde have in them a very great power of affecting the Body. Of which

thing we have every where examples extant. *Suidas* writeth, that a certain person naturally timorous and fearful, hearing but the bare report of *Hercules* his coming hid himself for fear in a private place; from whence now and then looking forth, and at length seeing *Hercules* by chance passing by, he fell down dead with fear. And so *Julia* the Wife of *Pompey* died suddenly, upon the sight only of her husbands Garment spotted with blood. And as *Plutarch* testifieth, *Lentulus* also hearing unexpectedly of the death of *Pompey* fel down dead suddenly. And some there are that upon the sight of their own blood in venesection, or when they have received any Wound have presently swooned and sunk away. And *Manlius* (in his Common places, Sub. 5. Precept.) relateth this history. A Fool or Natural (saith he) for some fault by him committed was brought forth unto a pretended and feigned, but not really intended punishment; as if he should have been beheaded. The Headman cometh, and shews him the sword indeed, thereby only to terrify and scare him, and withal lightly striketh him on the neck with a little wand, and thereby makes the Man (fearful and faint-hearted fool as he was) to fall down dead, to the admiration and astonishment of al the Beholders. And *Johannes Matthæus*, (in his Physical Quest. Quest. 27.) telleth us this story. When (saith he) in the Court of the most illustrious Prince *Ernestus Fredericus* Marquess of Bada, his Highnesses Chief Gentleman of his Chamber *Johan. Beckher* a Plethorick young man, was but lightly touched in his lower eyelid with a blunt-pointed sword (such as they were wont altogether to exercise themselves with in their fencing schools) from the hand of a young beardless youth, possessed with rage and indignation, and taking it most heynously thus to be soyled by a boy, and his own scholar, fell suddenly into a most grievous Epileptick Convulsion, which in the space of four or five hours ended his life. And I my self also remember a certain Student (stout hearted enough otherwise) Who being by a Chirurgurgeon to be let blood (in my presence, and at my command) as the Surgeon was about according to the custom to bind his Arm, and began but to move his Instrument toward the vein, he fainted away, and fell from the seat wherein he was sitting, before ever the Lancer was put neer unto his Arm, whenas Nevertheless he had neither fever, nor any other Disease that might any waies cause and occasion this swooning of his.

Eightly, and Lastly, an Inflammation following upon a Wound may render that Wound Mortal, if it be internal. For indeed an Inflammation doth not necessarily accompany any Wounds: yet notwithstanding because

cause that in internal Wounds those Medicaments cannot possibly be administered that were wont to be applied in external, if any internal part (especially if it be more Nervous, and of an exquisite sense) shall chance to be wounded, then a pain is excited, and thereupon an afflux of Humors, and from thence an Inflammation, a fever, a Gangrene, and other Evils do arise, that destroy the Wounded person within a very few daies. And from hence it is, that the Vulgar do likewise in Wounds observe the seventh and the ninth day; because that within these daies those Symptoms are wont to supervene, and in these daies to bring the greatest danger unto the sick Party.

Some there are that add yet another Cause, to wit, the influence of the Stars. And so *Franciscus Vallesius* (in his Comment. upon the 95. Text. B. 4. of *Hippocr. his Epidem.*) saith that the Malignant Aspect of the Stars and Constellations is the Cause why light and very slight Wounds are oftentimes likewise rendered Mortal. And the very same *Quercetan* also tells us (in his Third Chap. Touching Wounds made by Guns) and that for this very Cause the Wounds of the Head are for the most part wont to be Mortal, at *Ferraria*, and *Florence*. But this Cause is not to be admitted of; neither can there any Reason be easily rendered, why at *Ferraria* the wounds of the Head should be mortal, and not so in the neer neighbouring *Rhodigium*, or *Bononia*.

And from these Fundamentals no doubt it is that Civilians likewise take upon them to pronounce what Wounds are of themselves and in their own Nature Mortal, and what not. *Nicolaus Boerius* (in the place alleadged, N. 18.) propoundeth six Conjectures, from which it may be Collected, that the Wound was not Mortal of it self, but that it was made such by Reason of some accident happening thereupon. The first is, if the Wounded person died not until a longer time after then wounded persons are wont precisely to prolong their Lives. The Second is this, if there were present no dangerous Symptoms in the beginning of the Wound; or if there were any present, and remained for a while, the sick person notwithstanding was not much the worse for them. But that he was able to perform all kind of Actions in such a manner as they are not able to do that are mortally wounded. For if he shall appear to be in a fair way of Recovery, and then afterward die, it is to be believed that he died upon some other Cause, and not from his Wound. All which notwithstanding are to be understood only of a Wound that is not of it self Mortal. The third Conjecture is, if the sick

person (in the Course of his life) were not so ordered as wounded persons ought to be; but that he exposed himself unto the cold Air, addicted himself unto excessive drinking, were often distempered with passions of the mind, immoderate Anger, frequent affrightments; and overmuch addicted to Venery. The fourth, if the Physicians were of opinion, and that they adjudged the Wound not mortal; who as men experienced in their Art ought to be beleaved. The fifth is, if the wounded person had no Physician with him; or if any were sent for unto him, he was one altogether ignorant and unskilful; which is al one as if he had had none at all. Which yet nevertheless (as hath been said) is only to be understood of a Wound not simply mortal in it self. For if a Wound be in it self mortal, albeit there were no Physician sent for, yet nevertheless we are not thence to collect, that the wounded person might have been cured. The sixth and last Conjecture is, if the wounded person be of a strong Nature. For in this Case, if due care be taken in the preserving of the said Natural strength and vigour, the sick person very seldom miscarrieth. But if the Wound being not mortal, the wounded person die, and that in a short time, we ought to collect that he died not of his wound, but that he died from some other Cause, as we said before.

And this is the Judgment of all Physicians in general touching Wounds, both mortal, and not mortal. But yet there ariseth another Question among the civil Lawyers, to wit, whether the person that inflicteth the Wound may be found guilty, and condemned of Homicide. For these do not only (as Physicians) weigh and consider the quality and Nature of the wound, but the minde and intention also of the party wounding, and other Circumstances likewise; touching which we may see more in the Books of these Civilians.

### The Rest of the Prognosticks.

Now although that out of what hath hitherto been said may easily appear what is to be foreknown and foretold touching the event of wounds; yet nevertheless we think it not amiss here to add somewhat more as touching the premises. For although that other Wounds (besides those we have already spoken of) do not indeed suddenly destroy and kill the person; yet nevertheless some of them are far more dangerous then other; and even of these some are more easie, some more difficult to Cure. And this in the first place is to be learnt from the very substance of the part. For the fleshy parts of all other are most ea-

sily brought together and sodered again; the rest, as the Veins, Arteries, Nerves, Tendons, and Membranes, with more difficulty. They may be united, and made to grow together again, but it will be more slowly. *Galen* (in his 1. B. of the Seed, and 13. Chap.) tells us, that himself saw the Veins in the Head (and those both many of them, and great ones also) grow again; and (in his 5. B. of the Meth. of Physick Chap. 7.) that he saw an Artery also united. Secondly, from the Action and Use of the part. For the more Noble the part is in regard of its more necessary Use, and the Action that it performeth for the good of the whole Body, so much the more dangerous are the Wounds of that part. And those parts likewise that are in continual motion will not be brought to grow together again but with much difficulty. And the more exquisite likewise the sense of the part wounded is, the more easily upon its being Wounded there happeneth unto it a pain, an Inflammation, a Deliry, a Convulsion, and other Symptoms. Thirdly, From the very greatness of the Wound. And Fourthly, From those things that usually happen and befall the Wound. To wit,

*Prognostick.* 1. The more Noble the part affected is, or which may likewise draw a more Noble part into Consent with it, by so much the more dangerous is the Wound.

2. Those Wounds that are in the muscles, far from the Joynts, and the Temples, are more easily Cured then those that are in the Nerves, Tendons, Membranous parts, and the Joynts. For the wounds of the Nerves and of the nervous parts are for the most part dangerous; in regard that by Reason of the pain, and inflammations, a Convulsion and other grievous Symptoms do easily happen: and therefore they require a very expert and diligent Chirurgion.

3. All the Wounds of the internal parts are more dangerous then the Wounds of the external parts.

4. Great Wounds are more dangerous then small ones, all things else being answerable.

5. Moreover (saith *Celsus*, in his 5. B. and 26. Chap.) that which may much conduce hereunto, is, the Age, and the Body, and the order and Course of life, and the time of the year: for sooner is Cured a Child, Youth, or young man; then one that is Ancient, and in years: and one that is of a strong Constitution is more easily and sooner Cured then he that is of a weak and infirm Body; and one that is not over fat, nor over lean sooner then if he were one of those; and he that is of an innure and sound habit, then that man that hath an unsound and Corrupt habit

of Body. And sooner likewise is that person to be Cured that is given to exercise, then the slothful and sluggish person; the sober and temperate, then one addicted to Wine and Venerie.

6. Wounds are more easily Cured in the spring time, then in the Winter, or the hot Summer.

7. That Wound likewise that hath a Contusion Joyned with it, is the more dangerous. And therefore it is of the two better to be wounded with a sharp-pointed or sharp edged, then with a blunt and dull Weapon.

8. Those Wounds are most safe, and most easie to Cure, that are made in a straight and direct line; but those with more difficulty, that are oblique; and those most difficultly of all that are round and orbicular.

9. If a Nerve, or a Vein, or an Artery, shall be wholly Cut, there is less danger impending, then if it be cut but only in part: alwaies provided, that they are none of the more notable Veins and Arteries, and Scintate in the deeper parts of the Body. For if a Nerve be wholly cut assunder, there is then no danger of a Convulsion; which we may well fear is nigh at hand if the Nerve be cut but only in part. And so, if a principal Vein and Artery be wholly Cut, the danger of the Hemorrhage is then wholly taken away, when the Vessel is Contracted, and drawn together: but if a Vein or an Artery be only wounded, and not wholly cut assunder, very dangerous Hemorrhages do then oftentimes arise. And yet nevertheless, if it be one of the most Notable and Observable either of the Veins or Arteries that is cut assunder, then that part unto which this befallerh is deprived of its wonted Native and necessary heat; and is sometimes likewise taken with an Atrophy.

10. Those wounds that have passed beyond the last and utmost term of Acute Diseases, and especially the fourtieth day, are not in themselves Mortal: but if the sick person die, this may proceed either from an ill disposition of the Body, or else by Reason of Errors committed in the Diet of the sick person, or the Physicians Errors in the curing thereof. Yet nevertheless such like wounds are not Cured without much difficulty; in regard that they indicate, that there is present some grievous Cause, which hindereth the Conglutination of the wound.

11. That wound is alwaies evil, by which there is something cut off, and by which the flesh that is cut off from one part hangeth upon some other.

12. Such as together with their Ulcers are troubled



troubled with Conspicuous and apparent Tumors, these are not subject unto any dangerous Convulsion, or Madneſſ: but those in whom they presently vanish and disappear, if this indeed be done in the hinder part, then Convulsions and Cramps follow: but if in the forepart, then there happeneth Madneſſ, an Acute pain of the side, an Empyema, and Dysentery; if the Tumors be more red then ordinary, in the 5. of the Aphor. Aph. 65. And ibid. Aphor. 66. If the Wounds being great, and depraved, there appear no Tumor, this betokeneth much evil; which Cellus (in his 5. B. and 26. Chap.) thus rendereth. But for a Wound overmuch to swell up is somewhat dangerous; but not at all to swell up is far more dangerous, Yea most of all perilous. The former is an evidence of a great Inflammation; and the latter a token of a dead and mortified Body.

13. That an Inflammation should supervene upon a great Wound is no wonder at all; and therefore it ought not in the least to terrifie us, if it do not long continue. But for an Inflammation to follow upon a smal wound, and for it long to Continue, this indeed is very dangerous, being such as is wont to excite a Convulsion, and Deliries, or Dotings.

14. When the fifth day is now come, how great the Inflammation is like to be, it will then shew it self. On which said day, the Wound being again uncovered, the color thereof ought well to be considered. Which if it be Pale and Wan, Leaden-colored, of a various colour, or black, we are then to know for a truth, that this wound is evil and dangerous; and this whosoever we well consider it, cannot much terrifie and affrighten us; Cornel. Cellus Lib. 5. Chap. 26.

15. A Convulsion in a Wound is very pernicious; Hippocrat. Sect. 5. Aphorism. 2.

16. A Vomiting also of Choler that is neither voluntary, nor yet accustomed unto, even presently to soon as ever a man is wounded, or while the Inflammation remaineth, this is an ill sign; because it betokeneth that the Nervous parts are wounded.

17. If the wound in the Arm, Hand, or other part, be so great, that by Reason of the Veins and Arteries cut asunder, it can no longer possibly receive any influx from the Liver and the heart, the extrem part then dieth; and therefore lest that the Gangrene should be communicated unto the sound part, it is maturely even with all speed to be cut off.

18. Those wounds that happen unto Cachectical and Hydropical persons are very hardly Cured; because that (as Hippocrates speaks of Ulcers) Whatsoever is dry cannot grow unto that which is sound; and whatsoever

is moist approacheth very neer unto that that is vitiated.

19. The greater the Wound is, the more time (all things else being answerable) is required for the curing thereof; and the less it is, the less time it requireth for its Cure; so that some wounds indeed are cured in twenty four hours time, but others require the space of many daies for their perfect Cure.

20. That wound that is not purged and cleansed but with much difficulty is likewise hard to Cure, and slow in the Curing; in regard that that which is an impediment unto the Curing thereof is not taken away without much difficulty.

21. A wound in that part that is apt and ready to receive the influx of the Humors is very hardly Cured.

22. All wounds that have any other affects complicated and interwoven with them, are the more difficultly cured. For the more the Affects are, the more Nature is hurt; and it is easier for her to take away and correct one only affect, then many; and in very deed, the more the affect that is conjoynd doth hurt the temperament of the part, so much the more difficult will the wound be to Cure.

23. All things extraneous, and that coming from without stick fast in the wound, if at the very first they cannot be drawn forth, they much retard the Cure.

24. Wounds have likewise their Critical daies; touching which Hippocrat. (in *Concordia Praenot.*) saith; That for a seaso (in the wounds of the Head) to begin the fourth day, or the seventh, or the eleventh, is very fatal and dangerous: but that for the most part it is to be Judged of if it begin on the fourth day of the wound, and so continue unto the eleventh; or that it begin on the seventh day, & continue unto the fourteenth or seventeenth; or if it begin on the eleventh, and continue unto the twentieth. And in his *B. of the Wounds of the Head*, he saith, that when any Error is committed in the Cure of a wound, that then for the most part (if it be in the winter) a Fever cometh upon it before the fourteenth day; but if it be in the Summer, after the seventh day; and there he also asserteth, that some perish either (in the Summer time) before the seventh or (in the winter) before the fourteenth. And in his *B. de Popular*, he there relateth, that unto the Son of Metrophanus being wounded in his Head there happened unto him a Fever on the twelfth day, and that he died about the twenty fourth day; And in the 3. *Popular*, he reporteth that Antonius of a wound in his head died the nineteenth day.

day; and a servant Maid in *Omylum* on the fourteenth day, unto whom a Feaver had befallen on the eighth day: and that the Daughter of *Nereus* by a friend of hers being in sport and merriment struck on the forehead of her Head, at that very time affected with the *Vertigo*, presently became breathless; and as soon as she was come home she was forthwith taken with a vehement Feaver, and with a pain in her head, and a redness about her face; and that she died on the ninth day, when on the seventh day about her right ear there proceeded forth a great quantity (more then a Porringer full) of filthy stinking Pus or Mattier, being somewhat red, but very offensive. And that the Son of *Phile* after a wound in his head had a Feaver surprizing him on the ninth day, and upon this he soon after dyed. And that *Aristippus* receiving a violent and grievous blow (by the stroke of an Arrow) upon the upper part of his Belly, died in seven daies after. And all along in *Hippocrates* we shall find, that he also in wounds did observe the Critical daies. The truth is that wounds (as wounds) have no Critical daies; since that a wound is a Disease without matter. But as there may happen unto it some certain matter (that ought to be Concocted) or some kind of disturbance of the Humors upon occasion of the wound, in this regard it may likewise have some Crisis. For even Nature herself, upon some certain fixed and set daies, both concocteth that that ought to be concocted, and calmeth the disturbance of the Humors. And therefore, whensoever on the Critical daies there is no change nor alteration for the worse, but that all things proceed in a right manner, and that the Symptoms which before were present are now quieted and Calmed, it then affords great hopes of a happy Cure to ensue. But if (on the Contrary) in these daies there supervene any evil, as pain, Inflammation, or Feaver; or if those Symptoms that were before present are not lessened, but are rather become more intense and greater then before, it then betokeneth either Death, or a very difficult Cure. And it is altogether a very rare thing, that any such kind of motion in wounds ever bode any good unto the party; since that it declareth that Nature is not able to quiet and Calm that Motion of the Humors that happeneth in a wound; but that being stirred up and set on work, she endeavoureth the expulsion of these Humors either unto the wounded part, or some other principal part. And therefore, when any such motion as this is taken notice of in a wound, rather much evil then any good at all is from thence to be presaged. And therefore it will be to very good purpose to observe those Critical

daies in wounds; that so by them we may come to know the useful actions of Nature, and that so we may not hinder them. We are likewise on these daies to abstain from all those things that may excite any motion of the Humors on the said Critical daies.

#### Chap. 4. Of the Cure of Wounds, and First of all, touching the Indications.

The first and Common indication of the solution of unity is the uniting thereof; or, unity dissolved theweth, that the parts that are separated and disjoyned should again be united and brought together, so far forth indeed as the wound is a simple affect. But if there be conjoynd other Affects, whether they be causes, or diseases, or symptoms, there are then so many indications given, as those several things are that are conjoynd with the Wound, and so constitute a compound Affect; and these may be very many. For sometimes the weapon or some other body sticketh in the Wound; which because that it is extraneous it hath the nature of a cause; and (as those things that are from internal causes, and in their whole kind preternatural) indicateth its removal.

If there be any of the substance of the flesh lost, there is then a double indication given; to wit, that which is divided is again to be united; and that which is wanting, again to be renewed. If the flesh and the skin be bruised, that that is bruised is to be converted into Pus, that so it may separate and fall off. And so likewise of all other affects that are conjoynd with the Wound, the case is one and the same.

Now we will first of all treat of a simple Wound, and the solution of continuity that is caused by a weapon; upon which there hath as yet followed no other evil: but yet because that sometimes the Weapon, or some other strange body inflicted with the wound sticketh therein, we will therefore together and at once treat of the removal of them.

But now, (as we said before), the common indication of a simple wound is union, as *Galen* teacheth us in his *An. Medic. Chap. 90*. And (as the same *Galen* hath it in his *third Book of the Meth. of Physick, Chap. 40*) a simple Wound only requireth agglutination. Now this Agglutination and union is the work of Nature alone; and by her operation only the wounded parts, as likewise those parts that are broken and disjoyned, do again grow together and are conglutinated. But then since that there is required for this purpose a certain medium, and a glue as it were; nature for this purpose maketh use of

of that very matter by which the parts are nourished, to wit, the blood. For this blood being attracted unto the part for nutrition, and sticking in the pores of the sides and the lips of the wound, is converted into a substance like unto the wounded part, to wit, flesh; and so by the benefit thereof, what was disjoined now groweth together again, and so of two becometh one. And this in the flesh the *Sarcopoietic* faculty performeth; in the skin, the cutifque or skin-breeding faculty: and so in every part, Nature generateth a Medium of the same kind, for the Agglutinating of that which was disjoined. And this indeed albeit that it be solely Natures work; yet the Physician in the furtherance of this work is a Servant unto Nature; and the truth is, that unless the Physician strike in for Natures assistance, she is in many things frustrated of her end; neither can she effect the intended Conglutination.

But now those things that in this case are to be done by the Physician, are reduced by Galen (in *Art. Medic. Ch. 90*) unto four heads. Nature her self (saith he) causeth to unite and grow together again those things that stood at distance one from the other, and she it is that restoreth the pristine Unity: but now it is our part and work actually to apply and put together the extremes of the distant parts, and being thus brought together into one, so to keep and preserve them; and thirdly to beware of this, that nothing fall into the Lips of the wound; and fourthly, our work it is to preserve safe and unburnt the substance it self of the part. And so in the Cure of Wounds, there are especially four offices belonging to the Physician specified by Galen in the place alleadged. First of all, the Physician is to see and take care, that nothing fall into the part affected, which may hinder the Conglutination. Secondly, That the Extremes in Unity dissolved may again be rightly conjoynded, and put together in a due and fit manner the one to the other; and the extremes thus Joyned together are so to be kept, until Nature hath done her work. Thirdly, That so the temperament and the innate heat of the part it self may the better be preserved, he is during the time of Agglutination to afford unto Nature all the necessary help and assistance that he can by the best of his skill and diligence. Unto which we may not unfully add a fourth, to wit, that those Symptoms which may, and are wont to supervene, may be prevented and corrected, and all those things taken away which may be any the least impediment to Nature in the Conglutinating of the Wound.

But now in regard that there may be a very great difference in the solution of Unity, these Scopes are not alwaies to be performed

alike in one and the same manner in all parts. And first of all, for what concerneth the wounds we are now treating of, if there be any thing extraneous (as Clods of Blood, or Haires, or any thing of the Nature of any sort of Weapons, or smal pierces of bones, or any thing else whatsoever from without) shall chance to stick in the Wound, that is to be taken forth, and extracted. For they cannot possibly become one, between which something lieth that is of a different kind. And indeed we are not only to draw forth of the wound (at the very first) all things that are extraneous, but we must likewise afterward take great Care, lest that any thing from without fall into the wound.

When once all extraneous things (if any such there were) are drawn forth, the lips of the Wound are then to be brought together, and Joyned close the one to the other; the which how it ought to be performed, we shall by and by shew you.

The parts that stood at distance being thus Conjoynded, all the rest of the work (to wit, that they may be united, and grow together in one,) is the work of Nature alone. For it is the only that Conglutineth these parts when they are disjoined. But seeing that Nature in this Agglutination maketh use both of the temper of the part, and the innate heat thereof; we must therefore do our endeavour that the temper and innate heat of the part may be preserved, or if it hath been by any means weakned, that it may be again restored. And seeing likewise that the matter of the flesh (by which the parts are Conjoynded) is the Blood; we must therefore take especial care, and use the very utmost of our endeavours, that the Blood that floweth unto the part affected may not offend either in quantity, or quality. For if the Blood be vicious, it cannot generate good flesh. And again, if there be too great abundance thereof, the flesh then becometh over Luxuriant and proud; and there are many Excrements generated: if there be less thereof then is requisite, it doth not then generate and make a supply of sufficient matter. And whereas the wounded part is made much the weaker both by the pain, and by the wound; therefore in the wounded part of necessity there must be produced store of Excrements, and corrupt filthy matter: and if the *Sarier* and Excrements intervene in the midst of the Lips when they are drawn together; or if that also there shall be any middle place between, which though it be indeed void of filth and Excrements, yet is full of Air, such a like Ulcer (I say) cannot possibly be Conglutinated by the sole Conjunction of the disjoined and distant parts; but that it may unite and grow



grow together again, there is a necessity that it be first filled up with flesh. And therefore in such like case as this there will be need of a farcotick Medicament. And so, in the performing of the cure of Wounds, our first office and work is,

1. To endeavor, that nothing extraneous and coming from without may stick in the wound, and betwixt the Lips thereof; and that nothing be left remaining therein.

2. That the Gaping parts of the wound may be again conjoynd.

3. That being conjoynd they may be so kept.

4. That they sodder and grow together again, each to other.

5. The performing of which seeing that it is the work of nature, it is especially requisite, that the temper and strength of the wounded part be by all manner of means preserved.

6. That all the symptoms, and whatsoever may possibly hinder the uniting and Coalition of the part, may be taken away, and removed. And thus, although that a wound, only considered as a wound, is one simple Affect, and seemeth to indicate and require one only uniting; yet nevertheless, the very truth is, that there are herein couched very many indications, as before we told you.

#### Chap. 5. Of things extraneous, and from without, that are to be taken forth of the Wound.

IN the first place therefore we must use our Endeavour, that there may be nothing extraneous in the wound that may hinder the union and glutination thereof. And therefore first of all, the blood is not instantly to be suppressed; and we must permit whatsoever we find sticking in the lesser veines cut assunder freely to flow forth. For so by this means there will both a less quantity of Pus be generated, and all the danger of putrefaction and inflammation be prevented. Which is likewise very well known by him who out of simple wounds is wont either to extract the blood, by sucking it forth with his mouth, or to squeeze it out by the compression of the wounded part with his finger. Moreover, when there are any hayres neer about the wound, they are to be shaven away, lest that they fall within the lips of the wound. Thirdly, if sand or earth, or any such like thing stick within the lips of the wound, it is to be cleansed away with wine. Fourthly, if there shall be any Clods of blood in the wound (seeing that they may hinder the uniting, excite pain, and putrefying may

cause a fever) they are therefore to be wiped away with a piece of a soft Linen Cloth, or a lock of wool; or if need require, they may likewise and must be taken forth with an iron instrument. In which action notwithstanding we must use no manner of violence at the first setting upon the cure; neither is all the Clotted blood at once to be taken forth, and especially if a Hemorrhage be feared; since that the clods of blood may stop the orifices of the veins, and the vessels may grow together under them: but this is to be deferred until the second or third dressing; when we have afterward nature herself (which beginneth to expel whatsoever is extraneous) helping and assisting. Fifthly, the little broken bones likewise (if any such be in the Wound) are to be taken forth. In the first dressing nevertheless only those things are to be taken forth that are altogether free and loose, so that they may be taken out of the Wound without offering any violence thereunto: but as for such smal pieces as yet stick fast unto other bones, in these Natures endeavour is to be expected, and so it will soon be seen whether she intend to unite these fragments that are broken with the rest of the bone, or else whether she purpose to make a separation. Sixthly, if Glass be broken in the wound, it is to be taken forth; and this is also to be done, if any other kind of Weapon, or Arms wherewith the wound is inflicted, stick in the Wound. But before we assay the extraction of the said weapons we are to look and consider, whether or no the wounded person be likely to live after the drawing forth of those things aforesaid. For if there be no hopes of life remaining, there is no such taking forth of any thing to be attempted, no not of the weapon itself; lest that the Chirurgion should be thought to have hastened on the parties death and left the wounded person dye under the very hands of the Chirurgion; which happeneth sometimes in the wounds of the Heart, of the Brain, (the basis thereof especially) the *Vena Cava* (or great hollow vein) or the great Artery. For it hath been observed, that such wounded persons though the weapon hath been left in the wound, have yet lived for the space of a whole day; but that upon the drawing forth of the weapon (by reason of the Hemorrhage following thereupon) they have instantly died. But where there is any hope that the sick person may be recovered of his wound, we ought then to labour that first of all the weapon be drawn forth. For the weapons, as likewise leaden bullets, although they may sometimes stick very long in the body: yet notwithstanding it is a very rare thing, that a wound

wound should be perfectly cured, the weapon still secretly abiding in the body.

But now to draw forth the weapons aright is a thing of much difficulty; and this difficulty ariseth especially from the place into which these weapons being thrust into the body have penetrated. And therefore for him that will attempt rightly to draw out the weapons forth of the body, there are two things mainly necessary; First, wel to consider and mind the substance and nature, the figure, situation, and connexion of each severall part of the body: and then Secondly, to know the diversity of the weapons, from their matter, magnitude, and figure: and it is likewise altogether necessary (in the drawing out of the Weapons) to be cautious, that the veins, Arteries, Nerves and tendons be not torn or violated. For (as Ambrose Parry saith truly) it would be a thing very shameful, and much unbecoming an Artist, that the hand of the Chirurgion should do more hurt then the iron weapon. But that the weapons may the more safely and expeditely be drawn forth, let the wounded person be set in such a posture and figure as he was in when he received his wound. Which if it cannot altogether be done, yet lying along let him so be placed, that he may come as neer as is possible unto that figure.

Now the Weapons are taken forth in a twofold manner, either by extraction, or impulsion; that is to say, either the same way that the weapon went in, or else that way that it tendeth. It is extracted the same way that it was thrust in, either without making any section, or else by a section made in the part. For if the weapon hath not pierced very deep, if it hath not passed thorow the great vessels and Nervous places; and if that either right opposite unto it, or the way that it tendeth, it hath bones, veins, arteries, or nerves; and lastly, if there be no great fear of any danger to follow upon a wide opening of the part; then in this case, it may be drawn back the same way by which it pierced into the body, and that without any section at all.

But if there be any danger, and cause to fear lest that the body may be torn, if the weapon be drawn back the same way by the which it entered in; the wound is then to be dilated, either by section, or else even without it; to wit, with that instrument which Celsus (in his fifth Book, and Chap. 7.) calleth *Ypsileider*, or else with a Swans bill, or Storks bill, or some other dilating instruments, to the end that the weapon may

be drawn forth the more easily. But then, the weapon is to be drawn forth either with the Hands, (if that may conveniently be done, as when it standeth out, and is fastned in the flesh alone:) or else with that instrument they call *Volsella*, when it sticketh deeper then that we may well lay Hands upon it; or with those other instruments that the Greeks call *Beloulca*; of which sort are the long Gisers that are full of Teeth, straight, or a little Crooked, broad in their extreame part, and likewise round; unto which the Chirurgeons of latter times have given divers names from their severall Figures; and they call them Crows Bills, Storks Bills, Ducks Bills, and Goose Bills; severall Figures whereof we find extant in Ambrose Parry his tenth B. and 18. Chap. and likewise in Johant. Andreas a Cruce.

But if the weapons point hath penetrated further then unto the middle part of the Member; and that the space and distance by which the weapon is to be drawn back be greater then that which yet remaineth to be passed through, and that neither Bone, nor Nerve, nor Vein, nor Artery any way hinder it; it will then be more commodious (a Section being made) to drive the weapon forward by that part toward which it tendeth, and so to draw it forth by a wound new made. For in this manner it will be drawn out more easily, and the wound will the sooner be cured, in regard that now the Medicaments may on both sides be applied. But yet nevertheless if the Weapon be too broad, it will not then be expedient to draw it forth through the other part, lest that we add unto the great Wound it self another likewise as great. And if also the Weapon be thrust in between two bones, the Members lying next unto them are to be widened (according to the usual manner) and drawn severall waies, that so the space betwixt the bones may be the looser and wider, for the pulling forth of the Weapon thrust in between them.

But if some smal piece of a Bone, or a Thorn, or Splinter, or any such like, stick in the Wound (that can neither be drawn forth with the hands, nor any instrument,) it is then to be extracted by those Medicaments that have in them a power and viture to draw forth. And for this purpose there are commended (by Dioscorides, in his 2 B. and 58. Chap.) those things that follow; to wit, the Heads of Lizards, bruisd smal, and imposed thereon; Water Pimpernel or Brook-Lime, Dittany of Crete, the Roots of round Aristolochy or Birth-wart, Anemony or

what Medicaments they are that draw forth those things that stick in a wound.

*Wind-flower, the Root of Narcissus, of Gladiol or Cornflagee, and of the Reed, Sagapenum, Galbanum, Ammoniacum, Pitch, Pine-resin, and the like, administered in the form of an Emplaster.*

There is also commended the Emplaster of *Avicen*, that is Compounded of Leaven, Honey, or the Propolis (as they call it) of Bee-hives, of each half a pound; Bird-Lime three ounces; Ammoniacum two ounces; the oldest Oyl three ounces.

And so is likewise the Unguent of *Betony*, and the fat of an Hare. Or,

Take *New Wax*, one pound; Colophony, and yellow Rosin, of each four ounces; Ammoniacum, two ounces; Bdellium, one ounce; the Juice of Citrons, three ounces; the Oyl of Yell<sup>r</sup> of Eggs, four ounces; of the Load-stone, five ounces: And make an Emplaster according to Art. Or,

Take *Virgins Wax* four ounces; Turpentine two ounces; the Load-stone one ounce and half; Hulled Beans, one ounce; Harts Fat, half an ounce; And make an Emplaster according to Art. Or,

Take Rosin of the Pine-Tree, two ounces; dry Pitch, one ounce; Ammoniacum, Sagapenum, Gum Blemy, of each half an ounce, Root of round Aristolochy, and of white Dittany, of each one dram and half; Cretan Dittany three drams; old Oyl, or the Feces of the Oyl of white Lillies as much as will suffice. And make a Cerot. Or,

Take Oyl of Olives one pound and half; new Wax, one pound; let them melt together; and then add Litharge of Gold one pound and half: then boyl them, after this adding and mingling therewith, of Galbanum and Opopanax, of each one ounce; Ammoniacum and Bdellium, of each two ounces: Let these Gums be dissolved in Vinegar, and then add of the Root of round Aristolochy, Mastick, Mirrb, Frankincense, and Lapis Calaminaris, of each two ounces; and in the Conclusion boyl them all together with a soft and gentle fire, adding thereunto in the latter end of the boyling, Oyl of Baies, and Oyl of Turpentine, of each four ounces; and stir them wel together during the boyling: then pass them through a Linen Cloath into cold water; and then softening all with the Oyl of Camomile or Turpentine, Make an Emplaster. Or,

Take *Narcissus Onions*, two of them, Reed Root one ounce, Gladiol Root half an ounce, Mullen leaves one handfull; rotten Doves dung, one ounce; wild Cucumber Root, and the Root of Round Aristolochy, and of white Dittany Root, of each three drams; Cretan Dittany half an ounce, the meal of the bitter vetch Orobus, a little quantity thereof, Honey as much as will serve the turn. And make an Emplaster. Or,

Take *Wax*, and Turpentine, of each six ounces, Colophony, Ship Pitch, of each one ounce; Ceruss, Roman vitriol, of each four ounces, Lap. Hematites, or the Blood-stone, and the Load-stone, of each two drams, Mastick, half an ounce; Frankincense, Camphire, Mummy, Dragons Blood, of each one ounce; Oyl of Juniper one ounce and half; Oyl of Eggs six drams, Oyl of Cloves two drams; of Saint Johns-wort, half an ounce; of Earth-worms an ounce; And make an Emplaster.

Touching the drawing forth of the Weapons out of Wounds you may see more in *Cels. his 7. B. Ch. 5.* and in *Paulus Aegineta his 6. B. and 38. Chap.*

But if by no artificial means the Weapon (or whatsoever else it be of any thing Extraneous) cannot be drawn forth of the Wound, the whole business is then to be committed unto Nature; which oftentimes in this kind worketh wonders, as it were; and expelleth those preternatural things that are thrust into the Body, by any waies whatsoever where there is any possibility: of the truth whereof we every where meet with Histories to confirm it. *Hippocrates* (as he tells us, 5. *Epidem.*) in one that had an arrow shot within his Groins, took forth the Head thereof six years after. And *Guilhelm. Fabricius* for one that had a knife run into the *Spina Dorso* or Back-bone, drew it forth two years after; as he telleth us, in his *first Cent. Observat. 62.* The like whereunto (and a thing very Memorable) happened here at *Witteberg*. For a certain Student being wounded with a knife even to the Root of his Nose, and the internal Angle of his right Eye, half of the knife being by violence broken (almost as long as ones Finger) stuck there firmly fixed in the bone: which when neither the Physician nor Chirurgion took any Notice of, heither he that had given the wound would be known of any such thing as the breaking of the Knife, the wound was speedily consolidated. It happened notwithstanding, that after a quarter of a year, the sick person felt a certain pain in the upper part of his Palace, before the *Columella*; and afterwards there was an Ulcer opened: and yet nevertheless, neither the sick person himself, nor the Chirurgion thought any thing of the Knife that lay hid within, but haply they thought that this Ulcer that was opened had its original from the rottenness of the bone wounded. Yet a little after it so happened, that behind the *Columella* there stuck forth some thing of a black colour, which they thought to be a shiver of the rotten bone. But the sick person coming to me for advice, I commanded the Chirurgion that with his instrument he should search, to find what it was; who immediately discovered



discovered that it was Iron; and so we found that it was the point of the knife that stuck forth. And without question the edge of the Knife by its motion had opened that aforesaid Ulcer before the Columella. But yet nevertheless, although the Chirurgion attempted the drawing of it forth, (the broader part of the Knife still sticking fast in the bones) the Knife do what he could was not by any means to be drawn forth; but that when all was done the whole business must be committed unto Nature; by whose assistance it happened, that the Knife hung forth every day more then other. At length, when the point of the Knife stuck forth in the Jaws almost the length of a Fingers Joynt, and that the sick person manifestly perceived some sensible motion thereof, (which before he had not done, in regard that by degrees and insensibly it daily conveyed it self downward, which he took no notice of;) he then conceived himself to be in extrem Peril, fearing that the Knife by reason of the sharpness of its point should make its way into the Bowels; and therefore with the Chirurgion comes running unto me, to ask my advice. But then suddenly the broken piece of Knife being freed and set at liberty by its own motion, and falling more and more downward, the point thereof was laid hold on by the Chirurgion, and so brought forth; and very little it wanted from falling into the Throat. And whereas (the bone being eaten through) a hole was left in the upper part of the Palate, which was a very great impediment unto him in his speech, (besides fit and convenient Medicaments, to cleanse, and dry much) at length I ordered him a thin plate of Gold, in the form of a shield, which in the back thereof had something sticking forth, and round as a Globe; this I caused to be provided for him, and then I ordered a little Sponge to be bound unto it; which said plate by the Sponge being put upon the hole, and there sticking, and shutting the hole, he spake distinctly enough to be understood. Yet notwithstanding the flesh began afterwards to grow and increase in the Lips of the Wound, (although but very slowly) and the hole became somewhat narrower. After I had furnished him with this plate, he departed hence: yet nevertheless the hole for the greatest part was filled up with flesh; and it was told me that he was now turned preacher, and that he could deliver himself very distinctly without that Golden Plate. And in *Guilhelm. Fabricius* his 2. Cent. Obser. 74. *Claudius Deodatus* relateth the History of a wound, which by a sharp Sword was inflicted upon the *Pylorus*, or at the top and entrance of the small Guts (as all the Chirurgions pre-

sent thought, indeed; but yet notwithstanding *Gilhelm. Fabricius* denieth it, supposing the Gut Colon to be wounded, which on the left side is annexed unto the Reins) and that it was miraculously Cured. But when after this (the Wound being covered all over with a Cicatrice) the sick person felt near about the part affected a sharp pricking pain, and a swelling withal, it so happened, that when about the end of the year he had dispatched his affaires, and was returning homewards, in the midst of his Journey he was constrained to ease and empty his Belly, and then together with his Excrements he voided forth by the Belly the very point of the Sword that was thrust into him. But seeing that now a daies wounds are more seldom inflicted by Arrows (then in former times) therefore also in our daies the Chirurgical Extraction of Arrows is very rarely required: but whereas now a daies most Wounds are made with bullets from Guns, there is therefore a greater necessity incumbent upon the Chirurgions of our times, that they extract and draw forth those Leaden Bullets that from Guns are shot and sent into the Body; touching which I shall speak further anon.

### Chap. 6. Of the Provision that is necessarily to be made for the binding up of Wounds.

**I**F in the Wound there be nothing sticking that is extraneous and of a different Nature from the part affected; or if there having been something sticking therein it be drawn forth, we ought then to endeavour that the lips of the wound may be joyned together. But now seeing that for the right performing of this, there is a certain provision and preparation to be made, as necessary thereunto (although notwithstanding for the most part the same provision is required likewise in the Curing of Fractures) therefore in the first place we shall repeat something in the general out of our *Institutions* touching the dressing and binding up of Wounds; and we shall afterward treat thereof more particularly.

Unto the binding up of Wounds there belong swathing, the injection of the *Splenia* (we shall shew you anon what these *Splenia* are) the fitting of the Splints, Illaqueation, or casting about of a binder, and the right placing of the part when it is bound up.

#### Of Swathing.

Now a Swathe is a binder that is both long and broad; and a due and fit swathing is a drawing about, and rolling together of the Swathe-bands about

*A swathe  
what it is.*

bout the Member that is to be cured.

Now touching Swath-bands, *Galen* (in his *B. of Swaths*) hath written sufficient, and indeed somewhat largely, and therefore for our better knowledge in this Particular, we are to acquaint our selves thoroughly with what he hath written. But that we may briefly speak something according to our purpose, (and as before we promised you;) Swath-bands may be made of Linen Clothes first put unto other uses and somewhat worn, that thereby they may be made more soft and pliable; but yet they must be so strong that they may not be broken. For although the matter of Swath-bands may be threefold, Linen, Woollen; or Skins, yet now adaies we seldom use any other but Linen only. But then these Linen Cloths must be Clean, Smooth, Soft; which have neither any Seams or Knots sticking forth.

*Differences of Swaths*

Now there are various differences of Swaths; which are all taken from the Figure, length and breadth. They differ in regard of their Figure, in that some of them are made so as to be woun'd up, long and equally broad, and rolled round together: others of them Cut; which indeed consist of one Linen Cloth, but this is cut either in its extreme or middle parts: others that are sewed together, that consist of Swaths and strings ending in several Heads. Swaths differ in their length, in regard that some of them are longer, others shorter; and so in their breadth likewise.

*Differences in the binding.*

And then of the binding up (that is done by the Swathe) there are two differences; one simple, another compound, or manifold. The simple is either equal, or unequal. The simple equal is only round, which on both sides bindeth together the Member affected in a circular fashion, without any declining on one side more then another. But the simple unequal is divided into *Ascia* and *Sima*; which yet differ only in regard of their being greater or less; because that *Ascia* declineth but a little from that which is round, but *Sima* very much. Of various and several sorts of Swathing there are many differences, taken from the similitude of the parts that are bound, or of certain living Creatures, or of other things; touching which we may see sufficient in *Galen* his *B. of Swaths*; and in his *Second Comment. upon the B. of those things that are to be done in curing of Wounds, Text 7.*

*The swathing how to be instituted.*

But that the Swathing may be rightly performed, it is first of all to be considered, from whence the binding is to be begun. For sometimes the binding is to be begun from the part affected, sometimes from the

found place nigh unto the part affected, and at other times also from the opposite part. And then next of all, in what manner the Swathe is to be drawn about. For sometimes the Swathing is to be begun from one end of the Swathe, and sometimes from the middle thereof. And Thirdly, We are to look wet that the Swathe neither binde and press together the part too hard, and likewise on the contrary that it be not over loose. For if it be too loose, it will not sufficiently keep the part together; and by its overgreat compression it will occasion both pain, and an Inflammation. But now that all this may be rightly performed, the use of Swathing will teach us. Now the Use of Swathing is twofold; one of it self, but the other only accidentally

*The Use of swathing.*

conduceth unto the Cure. Swathing considered in it self maketh much for the Cure, in regard that it bringeth together the parts disjoyned, contracteth the parts dilated, and setteth straight the distorted and writhed parts, keepeth within due limits the Member being set in its right frame, as also the conjoyned parts, repelleth the Humor flowing in; and if it be already flown in, it driveth and presseth it forth again. For in hollow winding impostumations the binding is begun from the very bottom, and endeth at the Orifice of the Ulcer. The extenuated parts are so to be bound up that the sound parts may be pressed together, and that the Blood may be forced unto the parts extenuated: which will be done, if the Swathing be begun from the sound, or the opposite part; from whence toward the extenuated part it may be a little loosned; and at length rolled about after the most loose manner upon or neer the extenuated part. But in the parts dilated, and when there is need of driving back the influx of Humors, the binding is to be begun in the place affected, and the two or three first rollings about let them be closer and harder then ordinarily.

But by accident these Swaths conduce unto the cure, when they are so administred, that they may contain those Medicaments that are applied for the effecting of the cure. Touching these see *Hippocrates* in his *B. of Fractures, Comment. 1. Text 21.* and in his *2 B. Touching those things that art to be done in the way of curing, Text 30, 31, 32, 35.*

### Of Splenia.

For the better binding up, there are likewise administred those things they cal *Splenia* which are Linen cloths folded together, and so termed from the Figure of the Spleen. They were by the Ancients called *Plumaceoli* because that they were made of Feathers sewed

sewed up between two cloathes: they are likewise called *Pulvilli* from the resemblance they have with a bolster. Now they differ in regard of their Figure, which is either long, broad, or thick. Their Figure is threefold, to wit, according to the end for which they are propounded, and the manner of their being imposed. For sometimes they are laid upon the part straight and long waies sometimes in an oblique manner, and sometimes transversly. And indeed they are sometimes laid on double, sometimes treble, and now and then four double; sometimes single, and sometimes more of them, according to their use and that which they ought to perform, to wit, the strengthening of the binding, for Members that are unequal in thickness, or for the making equal and filling up of parts that are lean and hollow; that so by their means the whole binding may become equal; and also for the defence of the parts from the weight and pressure of the Swathbands; and Lastly, for the pressing forth, and drinking up of the *Sanies* and Ichorous Excrements. And they are sometimes imposed dry; but most commonly they are soaked, and moistened in some kind of liquor that is fit and proper for the Disease and the part affected. Touching which see *Hippocrates*, in his 3 B. of such things as are to be done in the Curing of Wounds, Text 1, 2. and in his 1 B. of Fract. Text 32. and in his 3 B. of Fract. Text 21. As likewise *Galen* in his Commentaries.

### Of Ferulæ, or Splinters.

Sometimes (for the more convenient binding,) there are administered those things they call *Ferulæ*; to wit, smooth Splinters, that are wont to be fitted unto bones that are broken and out of Joynt, after such times as they are set again, and returned unto their due and proper place. *Hippocrates* and other of the Ancients made them of the woody bark of the *Ferula* shrub; and from hence also they have their Name. Now adaies (in the want of other) these *Ferulæ* are made of the thin shivers or long thin Chips of Wood, or the Barques of Trees, or paper glewed together, and pieces of a hard and thick hide. But yet we are here admonished by *Guilbel. Fabricius* (in his 4 Cent. Observat. 98.) that the barques of Trees (especially while they are new and green) are by no means to be administered in Fractures instead of the aforesaid *Ferulæ*. For when they are thoroughly dried they are apt to be contracted about the Fracture, and to excite pains; and sometimes again to move the bones out of their places.

*Hippocrates* requireth such *Ferulæ* as are

smooth, equal, plain, and a little hooked and sloping at the very ends, that is, such as are shaved smooth on the lower part of their ends, on both sides somewhat shorter then the Swathing lying under it, lest that they press together the part beyond the Swathing. Now they are imposed upon the Fracture on every side round about, so that they may not stand distant one from the other less then a Fingers breadth; and they are so to be fitted, that the ends of the said *Ferulæ* be not placed above the Heads of the Joynts that stick forth, or the Nerves nigh unto the Joynts; or that they touch upon the naked Skin. See *Hippocrates*, touching those things that are to be done in the Curing of Wounds, Tit. 11. and in his 1 B. of Fract. Text 40. and in his 2 B. of Fract. Text 5, 7, 11, 64, 69, 71. And *Galen* in his Comment. And *Paulus Aegineta*, in his Sixth B. Chapter 99.

And unto the extrem parts also that are grievously wounded, or broken, or disjoyned, (the Hands especially) there are sometimes applied little Coffers, or Chests of smooth Wood, so wrought that they may answer unto the Figure of the Member; or else such as are made of thin plates of Iron, or a hard Skin, or paper glewed together; that so they may hold together the parts united and conjoyned, that so they stir not, neither move to and fro, and so again start forth and fall out of their places.

### Of Laquei, or Binders.

Unto the binding up of Wounds there likewise belongeth the injection of *Laquei* (as they term them) which we may fitly call Illaqueation. Now this *Laqueus* is properly a bond so knit and tied, that what is drawn together, or pressed down by weight, may be shut up and closed. And the use thereof is, for the extending of bones broken and out of Joynt, for the keeping of them in their places when they are set, and for the streightening and close binding of the parts. The differences of these *Laquei* are very various, taking their Names either from the inventors, or from their use, or from the similitude and Figure of some thing or other, or from their manner of knitting, or from their effect: which since that they cannot well be perceived nor understood without a manifest Delineation, and very hardly from a bare description, therefore touching this Particular, Consult that B. de *Laqueis*, that is commonly ascribed unto *Oribasius*.



*Of the due placing of the Member after it is bound up.*

After that the affected Member is rightly bound up, it remaineth that it be likewise fitly placed. Now the due and fit placing of it consisteth in this, that the part have that position which conserveth the Natural figure thereof, such as is without pain, and fit for the cure of the disease. Now the member shall thus be placed, if all its parts, Bones, Muscles, Nerves, Veins, and Arteries, have that situation that they are neither distended, nor pressed together; if the Member be softly and equally situated; if in a hollow ulcer or wound the Orifice (as much as may be) look downward, that so the Sanies may be purged forth; and lastly, if in the placing there be a mean kept in regard of the binding up, and that the binding be neither too loose, nor yet over streight and hard. And indeed that there may in the placing be an apt and meet figuration of the Member, we must especially have respect unto two things, unto the Joynts, and unto the Muscles; to wit, in respect of the Joynts. That the Member have a middle figure (as *Galen* very often calleth it) which is without pain, to wit that in which we are both born, and accustomed to keep all our Members when we are out of Action; and in which no Muscles at all do act; and such as is equally distant from the extreame motion of the Joynts, or their extensions, and inflections: and in regard of the Muscles, to wit, that on one part it hath Muscles, and the whole entire fibres thereof; and that neither a whole Muscle, neither its fibres be distorted.

Now placing consisteth either in reposition, or suspension. A member is then fitly put back, when by certain props and stayes (as feathers, fleeces of Wool, or soft Clothes) it is so born up that it is made quiet, and rising upwards, lie alwaies equally and softly, so that it be neither shaken by any motion, nor assaulted by any flux; or that any *Sanies* or *Ichor* be therein retained. And from hence it is that (if the thigh be broken, and bound up) *Hippocrates* supporteth it with something like a Conduit pipe, (the ham being stretched forth) from the hip even unto the foot. Our Chirurgeons use to apply some certain props of straw or of paper rolled together like a Conduit pipe, and within filled up with hurds, and so involved and wrapt up in the extreme part of the linen clothes by which the whole Member is firmly held together, lest that it should unawares be moved.

But the Member is hung in a string and supported thereby, when the sick person either lieth down, or now beginneth to walk abroad. For although that while the sick party lyeth in his bed it sufficeth if that while he is awake he have his hand softly inclining upwards; yet, lest that when he is asleep he should unawares move it, therefore it is not amiss for him to have it hung in a sling of a swathband. But it is especially requisite when the sick party beginneth now to walk, that he carry his Arm wrapt up and hung in a swathe, (which the Greek Physicians call *Tenia*, and *Celsus* *Mitella*) the narrow heads wherof let them be cast about the neck; and for the breadth of it, in that part wherein the Arm is enwrapped and born up, let it be so broad that it may contain the whole arm, that so there may be no part thereof that is not equally supported. And here for the more fit underpropping of the hands there is oftentimes great need of those little Coffers or Chests, of which but even now mention was made; upon which the Hand (when it is bound up) is to be placed; and then (with the said *Capsula* or little coffer) it is to be put upon the swathband.

*Chap. 8. Of the swathing of wounded parts.*

And that we may apply unto Wounds all that hath hitherto been said of swathing in general; the Chirurgeon when he is ready to bind up the wound must in the first place be very careful in stanching of the blood, if it flow forth over abundantly. But since that there happeneth not unto all Wounds any such extraordinary and remarkable hemorrhage, (but only when the greater vessels are Wounded) of the stopping and stanching of the hemorrhage we will speak more below in the *fourteenth Chapter*. And now at the present (as for what concerneth the very swathing it self of wounds, the lips of Wounds when they are disjoyned are to be drawn together, & conjoynd: & when they are thus brought together they are then to be kept conjoynd; which without the solution of continuity may be done two waies; either by swathing, or Glew, or by stitching, and sodering it together *per Glutinum* (as they term it) which what is meant thereby, we shall anon shew you.

And First, as for swathing, this suiteth very fitly unto wounds that are made according to the length of the Member, and which are not very deep; and where we have hopes that by swathing alone the lips of the wound may be joyned together, there stitching and sewing

sewing is not rashly to be practised. But now let the linen swathe be neither too hard nor over soft; the breadth whereof ought to be such, that being once cast upon the wound it may not only comprehend & contain the said wound, but may likewise comprehend something on either side, even unto the very confines of the said wound. But if the Wound shall chance to be longer, the binding up of the wound is then better performed by a narrow & streight swath; that is, one of about three fingers breadth. Now this binding is accomplished with a swath of two heads, (as I may so say) or that hath a double beginning; and in Wounds that are not very long the middle of the swathe is first of all imposed upon the opposite part of the wound; and the rolling of it about is begun from it, and drawn toward the Wound, and above the Wound it is strained; and in this manner the lips of the Wound are rightly drawn together; and then after this, both heads of the swathe are rolled this way and that way, that so the lower part thereof may be drawn about by the lower part of the Member; but the superior by the higher part of the member; and all to this end that so the humors may the better be pressed forth of the part affected. Let this Ligature be streighter and harder above upon the place affected; then in the parts that lie neer unto it; and let it be such as is neither overloose, nor too streight. For if it should be too loose, it would not contain nor keep in the lips of the Wound being drawn together; and if it be overmuch strained, it would then cause pain, an afflux of the humors, and an inflammation. And therefore let the term or time of the straining be, as long as the sick person can well endure it. And in the Winter (by reason of the cold) the rollings and swathings about may be the more; but in the Summer the fewer the better, lest that by reason of the many windings about of the swath the part affected grow over hot. The knot is to be knit a good way distant from the Wound, or rather the heads of the swathe are to be sewed together. But now that in the greater sort of Wounds the drawing together of the lips may be made the easier, the *Plumaceolus*, or little pillow, or linen Clothes many times doubled, but most commonly four double (of all which we spake before) are to be administered: but according to the judgment and opinion of *Avicen* (in the fourth sect. of his fourth Book, tr. 1. Chap. 8) The triangular pillows are far more commodious; which two of them together (on either side one) are put unto the wound so that the sides of both of them being disposed and placed according to the length of the wound, (and therefore those aforesaid pillows, &c.

ought to exceed the length of the Wound) may have respect each to other. For the swathe being drawn upon the Angle of the Triangular Pillow forceth forward the pillow (together with the lip lying underneath) unto the Contrary part; and (as *Avicen* speaketh) straineth together only upon the fissure or cleft of the wound; which would not so be, if those pillows were four square.

### Of the stitching or sewing of Wounds, with Glewing.

But now whereas in transverse and long Wounds swathing alone will not suffice for the drawing together of the lips of the Wounds, and so keeping and preserving them, in this respect therefore there will be need of stitching. But seeing that in the Wounds of the face stitchings cause a great deformity, and in other long and great Wounds the stitches are oftentimes broken before the agglutination of the Wound; and because likewise that tender bodies will by no means away with sewing, (which is done with the needle) therefore a certain Glutination, or stitching with gluing hath been invented, which draweth together the lips of the Wound without any the least mangling of the wounded part, or pricking of it with the needle. Now this is the provision that is to be made: Strong Linen Cloathes are prepared, that are equal, soft, quadrangular, or triangular, or of some other figure, according as the nature of the situation of the Wound and member unto which they ought to be applyed doth require; let these be either folded together, or sewn (so as that the stitches may be no great eyesore) in that part wherein they have respect unto the Wound; and let threads now and then be passed thorow them in the broadest places of them. Unto these Linen Cloathes are to be fastned little handles or loops of threads many double, and twisted, and then waxed; at the same distance that the stitches are wont to be made, or if you please, somewhat a less distance. Upon this linen let the aforesaid *Glutinum* be spread, that is made of astringent and viscus clammy Medicaments; such as are, the white of an egg, Bolearmenick, Frankincense, Mastick, Sarcocol, fine flour Parget, Tragacanth, Corralls, and fat Rosin, As for instance.

Take *Bole-Armenick*, *Sarcocol*, *Mastick*, *Dragon's Blood*, of each two drams: Let them be mingled with the white of an Egg.

Or; Take Of the finest Flour, and Mastick, of each

each half a dram; Bole-Armenick, Corals, Sarcocol, of each one dram; Dragons Blood, two scruples. Mingle all these with the white of an Egg.

And if we fear that the said *Glutinium* may be separated (which is chiefly caused by the *Sanies* or thin Excrements that flow forth of the Wound) then the Rosin of the Pine, or of the Pitch Tree is to be mingled together with the rest, these not admitting of any humidity. As,

Take Dragons Blood, Frankincense, Mastick, Bole-Armenick, Rosin of the Pine Tree, of each as much as you think fit; and let them be mingled together with the white of an Egg. The Linen being in this manner spread over with the said Glue, and furnished with their little handles, two on both sides, at the sides of the Wound, (the distance of a Thumb one from the other) are so to be fastned thereunto that the handles may rightly answer the one to the other: and they are there to be left so long, until that the Glue being dried up the Linen stick fast unto the Skin; which commonly is wont to be done in the space of four or five hours. The Linen now sticking fast unto the Skin, the handles or threads aforesaid are to be drawn close together, and then tied fast one to the other, that so the Lips of the Wound may be rightly united. And in this manner, without any pain at all, and without any Cicatrice and Deformity (such as is wont to be caused by the Needles point) the Lips of the wound are drawn together, and being thus brought together and united they are so kept and preserved a longer time then by that sewing or stitching that is done with the Needle. The aforesaid kind of sewing seemeth to have in it this one only inconvenience, and discommodity, to wit, that it is of little or no use until after six or seven hours (for sooner then this it will not be dried, so as to stick fast unto the Skin:) whereupon it is, that many do first administer the sewing, and then afterwards the glew. But the aforesaid delay can bring no great danger and detriment along with it. And if any danger be feared, instead of the aforesaid Glue, an emplaster may be provided, (which sticketh immediatly) such an one as is described by *Cesar Magatus*, in his first B. of Wounds, Chap. 59. As,

Take The Gum of the Fir Tree, four ounces; the Liquor of the Elm-Tree three ounces; Rosin of the Pine, Greek Pitch, and Ship-Pitch, and Wax, of each one ounce; Ammomacum, Mastick, Tacamabaca, of each ten drams; Sarcocol, Dragons blood, Gum-Juni-per, and Gum-Hedera, of each six drams, the Root of the greater Consound, of round Aristolochy, Bisfort, and Tormentill, of each two drams,

The Gums that will away with melting are to be dissolved over the Fire with a portion of that which sweateth out of the Fir-Tree; and then the rest that are wont to melt at the Fire being dissolved according to art let them be added, and then let them be well and diligently mingled together, that so they may be reduced into one Body; and then after cast them altogether into an Alembick, and by the heat of the *Balneum* draw forth the Liquor; and when you conceive that the feces are freed from all their Watery Humor, unto these when they are again melted by the heat add the rest of the powders, and mingle them together with all care and diligence; and then again destil them, until that all the Humor be wholly evaporated; and then (withdrawing the Fire) suffer the *Balneum* to cool. For so it is, that the matter which is contained in the Vessel will become solid, like unto a Cerote, and it will be very tenacious; neither is it by the heat of a mans Body soto be melted and made thin that it forget its office and what it hath to do.

I my self also am wont to use this following, which may be provided with far less labour.

Take Bole-Armenick, Mastick, Dragons Blood, Frankincense, of each one dram; Gum Tacamabaca, two drams; And make a powder; which with a hot Pestle you may spread upon Leather, that an Emplaster may be made thereof.

*Cesar Magatus* hath likewise a peculiar manner of applying this suture by Gluing. He extendeth and spreadeth a part of such a like Cerote upon a new thin Linen cloth; and then with a pair of Cizers from this linen Cloth he cutteth off so many parts (of a Fingers length, or somewhat longer, and as broad as an ordinary point that we use to trust with, but in the ends of them something broader) as the stitches that seem to be requisite in a Wound, or not many fewer; and the first he applyeth in the middle of the Wound, and yet so, that it may stick only unto one side of the Wound in the half part of it, and that the rest be free. Unto this, at the side, (but yet opposite unto it) he applieth another; and so by turns he proceedeth, applying one on the right part, and another on the left: and after this, he layeth hold on the parts that are free, (and that as yet stick not unto the Skin,) one with his right hand, and the other with the left, and draweth them both together toward the opposite Lip, until that the Lips be so drawn together that they touch one the other: and afterwards he applieth both the parts that he held in his hand unto the opposite lip, unto which they did not stick; and here he is very Curious, and takes a great



a great deal of pains to make them stick right on all parts: and so likewise he proceedeth in the rest of them; so that betwixt one and another there is left as much space as is otherwise wont to be between the stitches.

And indeed the well experienced Chirurgion, who by his long practise knows well how by such like Emplaisters that stick close unto the Skin (of which there are many sorts of them to be made) to conjoyn the Lips of Wounds; this Chirurgion, I say, in almost all Wounds (Yea even in the very first dressing) knows how very well to be without the said sewing or stitching made with the Needle, which is both cruel, Bloody, and painful. And certainly it were far better that the Chirurgions should accustom themselves unto this manner of sewing Wounds together; in regard that in the other which is performed with the Needle after a kind of Barbarous fashion they oftentimes commit many Errors, whiles that in stitching of the wound they excite more pain then was caused by the wound itself: and using Needles that are too thick they take in more of the Skin then is requisite, and so often leave the Lips of the Wounds writhed, and pleited; infomuch that the Skin is not Joyned close unto the Skin, neither the Flesh to the Flesh; but the Skin is sewed in the midst between the Flesh: or if they do their endeavor to avoid this evil they fall into another as great, by taking so little hold of the Skin that the Wound is left hollow, and the stitches within a very short time break out again.

### Of the Suture, and Buttons.

And al these Conjunctions and drawings together of the fleshy and soft parts are performed without any wounding of the said parts. There is yet another also, which is done by dissolving of continuity. For not only the Ancient Chirurgions, but those likewise of our daies (in Wounds transverse, and great, and altogether in those wherein Swathing only will not suffice for the drawing together the Lips of the Wounds) use sewing and Buttons.

Unto the stitching or sewing of Wounds there are required three things, a Needle, a Thread, and the little hollow Instrument, having holes through one end of it. The Needle that is required (for its more easie penetration) ought to have a Triangular point, (which the Curriers most commonly make use of,) indifferently thick, (that so it be not broken, or pass through the more difficultly) and a little hollowed in the Tayl thereof, that the Thread

hinder it not in its passage forth. Most Artists require a Thread of Silk; yet nevertheless others reject this, in regard that it easily breaketh the Skin, and they take one of Flax, doubling it, that it may be firm and not easily broken. And this they will have not to be over much writhed, but waxed, equal, and of a mean consistence. And when the Needle is passed through one lip of the Wound, it is then likewise to be put through the other Lip of the Wound: and lest that the Lip through which the Needle ought in the Second place to be passed through, should in following fall under the other, and so be drawn aside too much from the other, therefore without there is an instrument laid unto it, which they term *Cannula*, or *Canalicus*. To wit, a little Pipe, partly Gold, and partly Brals, or else all of Silver, having holes through one end thereof, that so through the holes the Needle may pass; and that the Lip of the Wound may rest it self upon the Pipe, lest that whiles the Needle is passing through it should be moved, and so not follow upon the drawing forward of the Needle and Thread. And yet nevertheless the Lip of the Wound may likewise be held together by the tops of the Fingers, to wit, the fore Finger, and the middle Finger; and with the other it may be sewed together, if so be that the Thread pass through readily, which will be, if in the Tayl the Needle be hollow about the hole (as we have said) and that the Thread in respect of its thickness bear a proportion with the Needle.

Now the sewing is performed after this manner. In the middle of the Wound (the Needle drawing after it a double Thread) if the Wound be great the Lips of the Wound are to be thrust through, and a knot being tied the Thread is to be cut off a little above the knot. And then in the middle spaces on either side other holes are to be made with a Needle and single Thread, and a knot being then likewise made the Thread is to be cut off; and this is to be continued, until the Lips of the Wound be rightly sewed together. And this Suture is termed *Inter-cissa*, because that after every prick a knot is tied, and the Thread cut off. But we are well to look, that the stitches stand neither too wide, nor yet too close; for if they be too thin, they will not rightly hold the Lips of the Wound together; and if they be over thick, they then cause pains and Inflammations. And therefore between one prick and another let the space that is left be such, that

the Skin may as it were follow the Needle drawing it. Some will have it, that betwixt every stitch there ought to be a full Fingers breadth. But it is very seldom that there is need of so many stitches; neither do all Wounds require one and the same number of stitches; but according as the Wounds do gape more or less, so there will be need of more or fewer stitches. And yet notwithstanding it will not sometimes be amiss, that not only the Skin but likewise that some of the *Muscles* (if it lie underneath) be taken in, to the end that the sewing may be so much the more firm, and that the Skin be not broken thereby. And yet nevertheless we are to look well unto it, and to be exceeding Cautious that the Tendons be not prickt with the Needle.

And this is altogether the most usual and most Convenient manner and way of stitching and sewing of wounds; in which (this is likewise to be understood for all other cases) this only we are yet to acquaint you with (out of *Celsus* his 5. B. and 26. Chap.) that the stitches ought so to be made, that the very Lips are not indeed quite to touch one the other; that so if there chance to be any humor gotten together within, there may be made a passage whereby it may flow forth. And hence it is, that the Chirurgeons are likewise wont to thrust in Tents anoynted with some fit and convenient Unguents; that so the Humors that are wont to be gathered together in the wounded part may flow forth; and then also that the Medicaments may the better penetrate unto the bottom of the Wound.

*The Use of Tents.* Indeed *Felix Wirtzius* rejecteth the Use of Tents in Wounds of the Joynts, and of the Hands, in his second B. of Chirurgery, and 13. Chap. But *Guilhelm. Fabricius* upon very good ground refuseth this Opinion, in his 4. Cent. Observat. 76. and by four Examples he proveth the same to be both absurd and dangerous. The First Example is of a certain Citizen of *Cölen*, who neglecting these Tents, a Wound that he had received in his Hand closed up in the superficies thereof; whereupon about the fourth day a great pain arose, which was followed by a Fever, an Inflammation, and a *Pblegmone*, so that the Hand was in many places exulcerated; and it was not to be restored again without much labor and long time.

The Second Example is of a Citizen of *Lausania*, who pricked the hollow of his Hand with a Pen-knife. And because the Chirurgeon (by reason of the narrowness of the Wound) could not by Tents keep it open, there followed thereupon most grievous

Symptoms; and the sick person could hardly be restored to his former soundness until he had long endured much Pain and Torture.

The Third is of a certain Country Woman, one *Hildena* by Name, who with a Thorn prickt the very tip of her fore Finger. But when as (for the cause aforesaid) the superficies of the Wound had closed up, and the *Pus* or filthy corrupt matter was gotten together about the Nervous parts, there arose a great pain; and upon this there soon followed an Inflammation and a Gangrene, and from thence a *Sphacelus*. And yet notwithstanding this Woman (having had her Finger cut off even unto the Hand-Wrist) at length recovered.

The Fourth Example is of a certain Boor nigh unto *Lausanna*, who had a Thorn run into his Ankle-bone. But he neglecting the same, and the Orifice of the part where the Thorn went in shutting up too soon, there arose first a pain; and then there followed soon after an Inflammation and a Gangrene; and at length a *Sphacelus* invaded and seized upon his whole Leg: and refusing to give consent that the Leg should be cut off, he died within few daies after.

It appeareth therefore from these Examples, that Narrow Wounds (albeit they are in the Nervous parts) are so long to be kept open, until the Wound shall be sufficiently purged. For so it is that in every Wound whatsoever there will get together more or less of this *Pus* or purulent matter, (as we shall afterward more fully shew you) and this, if there be not opened for it a passage forth, must needs be there retained; and this by little and little groweth hot, and becometh very sharp; whereupon in the wounded part (especially if it be Nervous) there followeth a pain, which by attracting the Blood and the Humors exciterh and causerh most grievous Symptoms.

And yet nevertheless *Fabricius* here adviseth us, that the Tents are with such Art and industry so to be fitted and fabricated, that at the least they may hold together the gaping superficies of the Wound, until the rest of the wounded parts (to wit, the Flesh, and the Nerves) be sufficiently purged; and yet so, that they may not by any means hurt the Nervous parts. And that therefore the depth of the Wound is diligently to be observed; and great care to be taken, that the edge of the Tent (and more especially if either a Nerve, or any thing Nervous be discovered and laid open) press not together the bottom of the Wound. But now in those Wounds that are so narrow that they will not receive

in any Tent that is thick, and that that is slender and weak (as that which is over flexible) is turned this way and that way, and therefore cannot reach unto the very bottom of the Wound; in this Case he tells us that his custom was to impose a piece of a Gold or Silver thread, (as long as the Wound was deep) wrapt up in fine Linen, and anointed with some Anodyne and Digestive Unguent.

When the Lips of the Wound shall in this manner be conjoynd, they are wont commonly (and indeed not amiss) to impose the white of an Egg well shaken together, and put into hurds, with this following powder.

Take Frankincense two parts, and Dragons Blood one part; And make a Powder. Or,

Take Bole-Armenick and Terra Sigillat. of each six drams; Frankincense, Mastick, Sarcocol, of each two drams and half; Myrrh and Aloes, one dram and half; Tragacanth, Dragons Blood, of each one dram; Barley Meal, and Bean Meal, of each half a dram. Make hereof a Powder, and mingle the same with the white of an Egg shaken together, and put upon hurds, and so imposed upon the wound; upon which also other hurds that is only wet with the white of an Egg is to be imposed.

Neither is this Medicament administred but for very good Reason; since that it suppresseth the Flux of Blood, allwageth pain, and preventeth Inflammation. But now if there be no fear at all of any such excessive Flux of the Blood, or of any afflux of the Humors, we shall not then need to make any such provision against it; seeing that the Hurds and those Medicaments stick so Tenaciously unto the part, that being thoroughly dried on they contract the said part, causing great trouble unto the same; and when they come to be removed they excite much pain.

And now although that what we have already said might suffice, as touching the stitching or sewing of Wounds; yet nevertheless we think it not amiss here further likewise to add some other waies of the Sewing of Wounds, as we meet with them in several Authors. For there is moreover another manner also of sewing of Wounds; which is indeed performed altogether in like sort as Leather-dressers are wont to sew their Skins together; and this is then only fit when the Intestines are wounded and the Veins and Arteries cut assunder.

There is yet another way of Sewing them, which is done with two Needles: and this way *Celsus* used, and describeth it in his 7. B.

and 16. Chap. where you may see it fully set down.

There is among the Ancients mention made likewise of Buttons: For (as *Celsus* writeth in his 5. B. and 26. Chap.) if the Wound be in the Flesh, so that it gape, and that the sides thereof cannot easily be drawn together into one, then sewing is improper, and in this case buttons are to be imposed (the Greeks call them *Agēterae*) that may only a little contract the sides, to the end that afterwards the Cicatrice may be the less broad. And because that the way and manner of Uniting the sides of the Wound by buttons was generally so well known unto them; from thence it was, that neither the matter of these buttons, neither the form of them was ever sufficiently described by the Ancients. *Guido* (whom many follow) writeth that these buttons were made of Iron Circles as it were, or Semicircles, a little crooking on either part; the hooks whereof being on both sides fixed and fastened within the Lips of the Wound did answer exactly the one to the other. But seeing that in this manner to fasten in such hooks as these, and being so fastened there to keep them in the Skin, and especially the Flesh that is so sensible, was nothing else but a keeping there of so many pricking sharp-pointed Needles as it were, with an intolerable pain; it is not therefore Credible that the Ancients by Buttons understood any such Iron Instrument, to be fastened within the Skin, and there exciting pains that were not to be endured. The Opinion of *Gabriel Fallopius* is far more probable who (in his *Treatise of Wounds in General*, Chap. 12.) tells us that the Button was that kind of sewing that above we called *Intercisa*, and which at this day is in very frequent Use; in the which both the Lips of the Wound are by a Needle drawing after it a double Thread thrust through; and upon the Wound with three turnings in both the Heads of the Thread are drawn together; and tied up into a knot. And although that in Authors there be mention made of Gold and Iron Buttons; yet notwithstanding we are here to know, that the Word Button is a general word, and signifyeth every Instrument whatsoever that Joyneth and keepeth together any things unto which they are applied. And so *Cæsar* (in the 4. B. of his *Wars in France*.) speaketh of Beams or Rafter conjoynd with Buttons.

There was yet (as we read) another way among the Ancients of sewing and stitching of Wounds; (but this they thought not so convenient, and therefore it soon ceased as to the use thereof) in the which they on both

The Buttons  
of Wounds.



sides thrust through the Lips of the Wound so many Needles drawing Threads as they thought necessary for the Conjunction of the Wound; and then after this above the Wound they woun'd a Thread about both ends of the Needle; in the very same manner as Women (when they intend to keep their Needles in the Garments they are making) rowl together their Threads about both the ends thereof.

As touching the binding up of wounds, this is likewise to be observed; that we make an exact enquiry, whether the Wound be a simple or single one, or else whether it be reduplicated, and manifold. For it sometimes so happeneth, that although there be but one Wound in the Skin, yet notwithstanding in the Muscles under the Skin there are two or three. For if this should so chance, and that the Chirurgion should Cure only one of the Wounds, and altogether neglect the other that lieth hid, then will Pus get together in that other wound, and there cause great pain, Inflammation, Feaver, and other grievous Symptoms. Of the truth of which *Gulielm. Fabricius* (in his 4. Cent. Observat. 84. and 85.) giveth us two remarkable Histories. Where helikewise reacheth us, that the hollow nook that lieth hid may be opened; and there he also describeth, and plainly delineateth unto our view those Instruments that are fit and requisite for this purpose.

#### Chap. 8. Of those Medicaments that are necessary for the Curing of Wounds.

And these are the offices of the Chirurgion, which he ought to perform in and about the Curing of Wounds; but the very uniting and sodering together of the wounded parts is the Work and Task of Nature; which oftentimes likewise, without any help from Medicaments, (and this especially happeneth in inward Wounds) agglutinateth those things that are disjoyned. And therefore, since that Nature is the Efficient Cause of Conglutination, and Blood the matter thereof, it is necessary that these two be rightly disposed, and in a due temper. For first of all, the truth is, since that the faculty is not indeed hurt in it self, and yet notwithstanding may be frustrated of its end, unless the instrument (which here is the temperament of the part, and the innate heat) be as it ought; therefore we are to take care that the wounded part have its due and natural temper. And moreover (in the next place,) our endeavour must be that the Blood that floweth thereto exceed not its just quantity,

neither be less then what it ought; and likewise that it be good and pure. For the vicious and bad Blood that floweth thereto is so far from being fit to Conglutinate, that oftentimes it exciterh many dangerous Symptoms. And therefore if it be impure it is to be corrected, and the vicious Humors all of them to be evacuated. And there is also a due and right Course of Diet to be instituted, and all sort of meats to be avoided that afford a naughty and unwholsome Juyce, from which the Blood that is generated must needs be vitious. When we have thus taken care in these things, then afterward in the curing of the Wound there are also two Offices of Nature. The first whereof is, that the Pus the generateth be in a due proportion; and Secondly, That the Conglutinate those parts that are disjoyned. For first of all, (and although that *Galen* make no express mention thereof, whiles that he treateth of the curing of Wounds in the general; yet *Rhases* in his 13. B. and 14. Chap. and *Avicenn* in his 4. Sect. and 4 B. Tract. 3. Chap. 2. and *Celsus* in his 5 B. Chap. 26. tel us, that) there is a certain Pus or Purulent matter flowing forth of the Ulcer so soon as it once begins to give any hopes of recovery; and therefore this Pus must in the first place be furthered in its motion, and that then the Ulcer is to be Cleaned and filled up, and at length after this is done the wound is to be closed up with a Cicatrice. And happy experience hath indeed approved of that kind of curing; and those Medicaments that are for this end applied are commonly called Digestives. Neither is this without Reason. For whenas even out of the smallest Veins (when they are cut assunder) in the wounded part there floweth forth some of that Blood that by Nature is destined to flow unto the part, for its nourishment, this sticking in the pores of the part, and being so that it cannot be carried unto the part whither it tendeth, it is by Nature converted into Pus. And furthermore the very wounding it self hath Joyned with it some kind of Contusion, and the part dissected is altered by the Ambient Air. And therefore there is a necessity that what is altered should impostumate, and be turned into Pus. And therefore in this the Physitian ought to succour Nature, and to administer those Medicaments that help forward that generating of Pus (these Medicaments they commonly call Digestives) and afterwards to apply Sarcoticks, or such as Agglutinate. But here notwithstanding Authors seem a little to differ in their practise. For some of them (the said Digestives and Suppuratives being wholly neglected) presently administer those Medicaments that dry much, to wit, Balsams, either

ther Natural or Artificial ( of which we shall speak more hereafter ) with the which they both anoint the wound al over, and instill it likewise unto the very bottom of the wound, and by Tents also impose it upon the same. Others there are that in the first place make use of those Medicaments that further & help on the Pus, which they call Digestives. And Hippocrates himself seemeth to have approved of both these wayes, when ( in his Book of Ulcers ) he thus writeth. *At the newer Wounds (saith he) as well themselves, as the parts situate round about them, are but little or not at all infested with an inflammation if they be with al speed suppurated, and if that the pus of the wound be no waies suppressed by some small bone, as being intercepted thereby: or if we take care to prevent that nothing may come unto the pus but what is necessary, and that in as small a quantity as possibly may be; but that we dry it as much as may be with a Medicament that is not at all troublesome.* And experience hath taught us, that in both these waies of curing the Chirurgion hath attained unto his end, and what he desired. And yet nevertheless, it seemeth not that both these Medicaments are to be made use of without any kind of difference.

For in regard that those Digestive Medicaments so commonly made use of are more moist, if they be without great caution and overlong administrated, the matter beginneth not only to be digested, but also to putrefy; and the Wound degenerateth into a sordid Ulcer. For seeing that Nature is the author both of Concoction, and also of the generating of flesh, the native heat and the temper of the part ( Natures instruments ) are to be preserved; and we must endeavor that the medicaments may answer unto the temperament of the part. And therefore although that the former way of curing may have its place in those parts that are fleshy, as being such as are more moist, and in which there is much of the blood that is to be turned into pus sticking in the pores of the part, which ( that to the pain and the inflammation may be prevented ) ought as soon as may be to be converted into pus; which work of Nature those drier kind of Medicaments might more easily hinder yet in the parts that are more dry those drier Medicaments seem to be more commodious and proper; which as they may preserve the temperament of the part, so they themselves may likewise help forward the necessary generation of the Pus or purulent matter. And therefore the safest way is, not alwaies to confide in one Medicament alone, but rather to compound them according to the Nature and temper of the part; and to mingle Digestives with Sarco-

ticks and those that Agglutinate; since that experience testifieth that such are used with far better success then meer Suppuratives; as *Franciscus Arceus* writeth that with his Balsam or Unguent ( which we shall anon acquaint you with ) applied forthwith in the very beginning, he himself most happily cured the greatest and most grievous Wounds; the use whereof I my self have likewise very often experienced with very happy success. And therefore I will now subjoyne such Digestives, which are not meer Suppuratives.

There may then be provided Digestive Medicaments, or such as further the purulent matter, of the yelks of Eggs, Butter, Oyl of Roses, Oyl of Mastick, Rosin of the Turpentine or Fir-Tree, Wheat flour, Frankincense, and Mastick. As.

Take Turpentine washed in white Wine, two ounces; the yelk of one Egg; Barley Meal, and Honey, of each a sufficient quantity: And make an Unguent. Or,

Take Turpentine washed in Wine, May Butter unsalted, of each one ounce; Frankincense and Mastick, of each a like sufficient quantity. Mingle them. Or,

Take Turpentine, half an ounce; Frankincense, one dram; fresh Butter, one ounce; the yelk of one Egg; And mingle them. Or,

Take Citrine Wax, one ounce; Oyl, four ounces; Frankincense and Mastick, of each two drams; fresh Butter as much as will suffice, the yelk of two Eggs: Mingle them. Or,

Take Oyl of Roses, half an ounce; Turpentine, one ounce; the yelk of one Egg; And mingle them.

So soon as ever there is any appearance of good Pus, the next thing we are to do, is, that we Conglutinate that which is wounded and disjoyned.

Now we are taught by Galen ( in the 91. Chap. of his Art of healing; and in the 3. B. of his Meth. of Physick, Chap. 4 ) that the Union of the Parts disjoyned in Wounds is wrought in a twofold manner; to wit, either by a true Union, which is by a Medium of the same kind, and not by the intervening of any other substance; or else by a Medium of a different substance. The former Union they call a Union according to the first Intention; because that such a Union is intended both by the Physician, and also by Nature her self. The other they term a Union according to the Second intention; because that both the Physician, and Nature, when they cannot attain unto what they primarily intend; they then do what they can.

The Union of the Parts how caused.

In the former manner the soft parts and the flesh are united and grow together; but the hard parts in the other manner; to wit, the bones, and the Skin; of which those are united by a *Callus*, but these by a Cicatrice. Unto the former Union is required a substance of the same kind, and a strong Active faculty; which in the other are wanting. For in the Flethy and soft parts there is present abundance of Blood; and in these the heat is strong; and thereupon the Blood by a very small alteration may be changed into Flesh, whereby the wound may grow together. But in those parts that we call spermatick, and the harder parts, (the Nature of which parts being at a far greater distance from blood, and the Native heat of these parts being much weaker) it is not the very same that is generated anew, but some thing like these unto. For instead of a Skin there is bred a Cicatrice (most like indeed unto the Skin, but harder and thicker then it) and instead of a bone there is a *Callus* produced. And this distinction of *Galen* (as being that which is generally and commonly received) I my self have likewise followed (in the 5 B. of my *Institut. Part 2. Sect. 2. Chap. 4.*) and even in his very manner. But it seemeth altogether to stand in need of some kind of Explanation. Now this especially consisteth in the division of the part into parts spermatick, and parts proceeding from Blood; by which it is determined, that certain parts are generated from the Seed, and certain of them from the blood. Yea, some certain Physitians there are (among whom *Cesar Magatus* in his 4. B. and 15. Chap.) who deny that the blood is the immediate Aliment of the spermatick parts; but they write that there is a necessity, that if the blood ought to nourish the spermatick parts, that then the seed must first be made.

But it is not my purpose here in this place in many words to discuss that Question; the which, as others, so *Andr. Laurentius* (in his 1 B. of *Anatomy, Chap. 21. Quest. 7.*) hath so largely and fully controverted. I conceive this to be the truer Opinion, that the first delineation of all the parts in the Womb is wrought by the Formative faculty from and out of the Seed. Whereupon *Hippocrates* (in his little B. of *Originals*) writeth, that the Conception hath in seven daies all whatsoever it ought to have; all the Members, the Regions of the Eyes, the Ears, the Hands, the Fingers, the Thighs, the Feet, the Toes, the Privities, &c. But now seeing that the Mass of the Seed is but little, it is impossible that the Bulk of the whole Body should from the Seed acquire that magnitude that it ought to have. And therefore afterward the parts take nourish-

ment and increase from the Mothers Blood in the Womb; and afterward the Child being brought forth into the light, the parts are augmented from the Blood, and so even unto the end they are nourished with the blood. Which manifestly appeareth even from this, that the very bones when they are at any time shaved yield forth Blood, which is their Aliment.

But now, that which some affirm touching those parts we call spermatick, that they are nourished by the Seed, is a thing most false. For how can so great a bulk of the Body be formed, nourished, and augmented from so small a Mass of Seed? And then again, the Seed is no where else generated but in its own proper Vessels. Yea moreover, Children (whose bones nevertheless are nourished and augmented) do not generate any Seed. Neither is it sufficient, what *Laurentius* saith, that the blood variously changed, and suffering many alterations, made white, and thickned, is nothing else but Seed. For this is most false. For neither is the Seed any where else generated but in its own Organs; neither are other substances Seed, although that in whiteness they are like unto Seed.

And therefore albeit that those white and more dry parts (which they commonly call spermatick) be generated and nourished from the Blood suffering many Changes; yet nevertheless in very truth they are generated and nourished from the Blood. And therefore it is true indeed that the flesh that is generated for the agglutinating of the Flethy part of the Wound is altogether like unto the former, as being such into which the blood (by reason of the neer alliance of the matter, and the strength of the Flethy parts) is most easily changed: but yet I shall not rashly affirm, neither easily believe, that the Skin and the bones, and the rest of the spermatick parts may be united by any thing heterogeneous; and yet without any absurdity I think it may be said, that the Cicatrice is a Skin, and the *Callus* a bone. For although there appeareth some kind of difference between a Cicatrice and the Skin, and between a *Callus* and bone; yet nevertheless they are not of a different substance; but that dissimilitude proceedeth from thence, that the blood needeth many and more laborious changes, that it may be made Skin, Nerve, or bone, then that it may be made flesh; and the heat of these parts is the weaker, in regard that it was weakened by the Wound. Wherefore the Formative faculty indeed generateth both the Skin, and the bone, but such as are not of so great account as are those that are generated in the first Formation. And yet



in the mean time, although the Cicatrice and *Callus* differ somewhat from the former Skin and Bone, they are not for all this to be said to be of another kind. And that also even for this Reason, because that the Cicatrice is not at any time generated but from the *Cutis* faculy, neither the *Callus* but from the *Offisick* (or bone-breeding) faculy; and therefore hence likewise it is (as we told you above, in the 2. Part, Chap. 2.) that there is never any Skin generated from *Flesh*; but the Skin is evermore generated from the Skin; and indeed oftentimes a very great portion thereof, as is evidently to be seen in the Members that are cut off. For who is it that will not rather call that Skin with which the *Flesh* of the Hand cut off is covered, then any thing diverse and different from it? But although that the Conjoyning and Conglutination of the Disjoynd parts be the work of Nature alone; yet nevertheless, that Nature may the more easily effect this, the Physician comes in for her assistance, by administering certain Medicaments both External, and Internal. The External are *Sarcotick*, or such as Generate *Flesh*; and *Kolletick*, or such as Agglutinate: Touching which we have already treated more at large, in the 5. Book of our *Institut. Part 1. Sect. 11. Chap. 9.* But although (as there we have shewn you) they may be propounded as divers; yet notwithstanding, seeing that the Conjunction of the wounded parts is wrought by means of the *Flesh*; the same Medicament (as is there said) according to the diversity of Bodies, and difference of the wounded parts, is sometimes *Sarcotick*, sometimes *Agglutinative*, and sometimes likewise *Epulotick*, to wit, such as generateth a Cicatrice.

But now, let us see and consider, *Sarcoticks*, by what power and virtue those Medicaments do afford any benefit in the curing of Wounds. *Galen* in his third B. of the *Meth. of Physick*, and 4. Chap. is very large and full in treating of this subject; and there he teacheth us, that there are two kind of Excrements produced in our Bodies; the one more thin; which for the most part is Evacuated by insensible Transpiration, and sometimes likewise by sweat: the other more thick, that sticketh externally unto the Body, and such as we term *Filth* and *Nastiness*. And so, that which is more thick, if it stick in the Ulcer is wont to make it sordid and filthy; but that which is thin maketh the Ulcer over moist, and so becometh an Impediment unto Nature in her generating of *Flesh*; and therefore (as he tells us) the filth and impurities are to be cleansed away, and the humidity to be dried up: and so, that those Medicaments are *Sarcoticks*, that mo-

derately heat and dry, and cleanse away those impurities without any biting, and are no waies *Astringent*: and that the end of *Sarcotick* and *Agglutinating* Medicaments is, not to permit any humidity at all to breed between the parts that are to be Joynd; as the same *Galen* teacheth in his second B. of the *Composit. of Medicam.* according to the kinds, Chap. 21. And that they ought not to be *Astringent*, lest that they should drive back that which floweth in, and stuff in those impurities into the part affected: and that they must not be over drying, lest that they consume that that floweth in; but only moderately drying, that what floweth unto the part may grow together into flesh. And this indeed is almost the common Opinion touching *Sarcotick* and *Unlnerary* Medicaments.

But some of the latter Physicians tell us that this is better performed by a Balsamick virtue (from whence likewise they call certain Liniments that are administered for the Curing of Wounds, *Unlnerary Balsams*;) But what this virtue is, they do not sufficiently explain: which if it be rightly explained, this Opinion will not then seem much absurd. For *Galen* teacheth us, (and so likewise other Physicians very frequently) that the Chirurgeons pains must in this most especially be employed, that the temperament of the wounded part may be preserved. For since that the Agglutination of the Wounded parts is Nature's work; and that Nature, in this, as in all other Natural actions, useth as her instrument the innate heat and temperament of the part; if that be as it ought, and if it be vigorous and strong, then the Curing of the Wound is happily performed; and by the benefit of this Native heat it hath been oftentimes known that many have recovered of the most dangerous wounds. But if the temperament of the part be vitiated, and the part become weak, Nature can then neither rightly concoct the Aliment that floweth thereto, neither Assimilate it, nor expel the Excrements; from whence it cometh to pass, that there happeneth a conflux of Humors unto the part affected, that there is an extraordinary heaping up of Excrements in the part, and from thence many Evils and Symptotts are attracted. Whereupon *Hippocrates* (in his B. of Wounds) writeth, that what is dry cometh the more nigh unto that that is sound; and that by how much the more moist any thing is the nearer it cometh unto that that is vitiated, and not sound. And therefore it seemeth unto me very probable, that Medicaments *Sarcotick*, and *Agglutinative*, and in a word, all vulnerary Medicaments, do indeed dry; and yet notwithstanding that this is not the only and primary operation they have; since that

that many Wounds (if so be the temperament of the part be safe) may likewise be Cured without the help and assistance of these like Medicaments; and Nature of her self expelleth those Excrements that are produced in a due and mean quantity. But it seemeth probable unto me, that those Medicaments are therefore profitable and expedient in the curing of Wounds, in regard that they do not only dry, and consume the over great store of Humidity in the Wound; but in that they likewise preserve both the temperament, and the innate heat of the parts (which some of the latter Physicians call Balsam) by their virtue, neerly allied and familiar unto every part; which virtue they seemably term Balsamick. And hence, therefore it is, that because there is not the same temperament in all the parts, and that there is a Native heat proper unto each part, therefore the same vulnerary Medicaments are not fit and proper unto all wounded parts; but some are convenient for a fleshy part, others for a Nervous part that is wounded; like as *Gum Elemi* is useful for all the Nervous parts; and therefore also most fit and convenient in all Wounds of the Head, as oftentimes before we have told you.

And I am the rather likewise perswaded hereunto, even by this, that in Wounds (especially of the Joynts, where dangerous Symptoms appear to be neer at Hand) our more skilful Chirurgeons do not content themselves only with Unguents and Emplasters, but upon those also they impose Cataplasms with very happy success; the which in regard they do not reach unto the Wound it self, they cannot therefore thoroughly dry up the Excrements that are therein; but they only cherish and preserve the Temperament and Native heat of the part. And I have oftentimes seen in Wounds of the Nerves, (in which by Reason of the weakened Temperament of the part there hath been an afflux of Humors, and in which by reason of the imperfect Concoction of the Aliment thereunto flowing great abundance of Excrements have been stored up, the German Chirurgeons call them *das Glied Vvasser*) that by the use of such Cataplasms the Wound hath been reduced unto a better State, and hath no longer voided forth so great an abundance of Excrements. Now those Cataplasms are prepared and made up of the *Roots of Marsh-Mallows*, the *Meal of Lin-seed*, *Fennugreek*, *Beans*, the powder of the flowers of *Camomile*, *Melilote*, *Betony*, and the like.

And yet notwithstanding, from this that we have said (to wit, that the main and chief Scope of Vulnerary Medicaments is to preserve and strengthen the Native heat of

the part,) it doth no waies follow, that by one Medicament the Wounds of all parts may be healed. But like as *Galen* (in regard of the dryness, which chiefly belongeth thereto) according to the various Temperament of the various parts administredth various and different drying Medicaments; so likewise according to the variety of the Temperament, the temper and heat of each singular part requireth divers Medicaments; so indeed, that what is fit and proper for one part may be hurtful unto another; and that which is proper and useful for a fleshy part may bring much damage unto a Nervous part. For the fleshy parts are endued with much heat; and therefore albeit those things they are Cherished with be not so very hot, yet nevertheless they have strength enough. But as for those parts that are bloodless, their heat is much weaker, and therefore they are to be cherished with such things as are more hot, and then more especially when they are much weakened with a wound. Yea it may so happen, that although in their first Qualities some Medicaments may seem alike; yet notwithstanding in regard of their substance (by reason of which some of them do sooner lose their strength and virtue, and others preserve it a longer time) they may much differ; Yea they may differ in their whole substance, and hidden property. Now that an instance may be given of such Medicaments *Galen* assureth us, in his *Composition of Medicaments according to the place affected*, and 1 Chap. where he inveigheth against such a deny that there are such Medicaments. But a Reason cannot easily be rendered for such Medicaments; only experience teacheth us, that some of them are more useful and efficacious in the curing of wounds, then other, and especially in the Wounds of these or those parts; although that in their first Qualities they differ but very little. In the mean time I am of Opinion, that the manifest Qualities in such Medicaments that work at once from their whole substance are not altogether idle and useles; but that they are singularly useful for the drying up of that excessive humidity that is in the Wound. And as there are Medicaments which in the propriety of their whole substance are accommodated unto certain Particular parts, (as some to the Liver, others to the Brain, and a third sort unto the Lungs) so likewise it is not absurd to say, that there are some Vulnerary Medicaments that are peculiarly designed unto certain parts; some to the flesh, others to the Nerves, and a third sort to the Brain, &c. And most certain it is, (as experience also makes it manifest) that *Gum Elemi* is singularly useful in Wounds of all the Nervous parts, as

also

also for the Brain; and *Betony* for the head, so that it is a thing of much concernment that in the administering of vulnerary medicaments we make a due and fit choice: and not only so, but the Nature of the sick person is likewise seriously to be weighed; since that even experience tells us, that in wounds some certain Medicaments are more useful for some Natures, and again, that some other are hurtful. And this indeed is chiefly to be discovered by experience, (if not only by experience:) and what *Galen* (in his third Book of the *Meth. of Physick*, Chap. 8.) writeth touching explicating Medicaments, the same is also true concerning all Vulnerary Medicaments, to wit, that due respect is to be had unto the excrements, and the state of the Wound. For if there be but few excrements generated in the Wound, and that the Wound be otherwise in a good condition, this is an evident sign and token of the excellency and usefulness of the Medicament therunto applyed; whereas on the other side, if there be many excrements heaped up in the Wound, it is an evidence that the Medicament administr'd was unfit and improper. In the mean time, neither are the manifest qualities to be neglected; but I conceive that of them likewise we are to make a due and fit choice, according to the temperament of the whole body, and the part affected in particular. Neither are we in this to neglect, but carefully to heed the constitution of the Air; but in the hotter seasons the medicaments may be the cooler; and the cooler the season the hotter ought the medicaments to be that we make use of.

Now the vulnerary Medicaments (both *Sarcotick*, and *Agglutinating*) are provided, and made of the Roots of the greater Confound, *Bistort*, *Tormentil*, the leaves of *Ladies Mantle*, *Shepherd's pouch*, *Golden rod*, *Balsam apple*, *vein*, *Speedwel*, *St. Johns Wort*, *Millefoil*, *Sanicle*, *Hors-tail*, *Elm*, *Plantaine*, *Betony*, *Cypress*, *Mousecare*; the flowers of *Red Roses*, *St. Johns Wort*, *Pomgranates*; *Cypress Nuts*; *Frankincense*, *Aloes*, *Mastick*, the tears (or sweat) of the fir tree, *Rosin Turpentine*, *Rosin* of the pine, and of the *Larch tree*, *dry Pitch*, the liquor of the small leaves of the *Elm tree*, *Gum Elemi*, *Gum Junip.* *Gum Hedera*, *Tragacanth*, *Tacamahaca*, the *Gum Cawanna*, *Sarcocol*, *Dragons Blood*; *Sealed Earth* *Bole Armenick*; the Rinds of the *Frankincense Tree*, the stone *Hematites*, and *Coralls*. Of which there are made divers compositions, *Liniments*, & *unguents*. The Chiefest of these *Liniments* is that of *Franciscus Arcæus*; viz.

*Liniments, and unguents.*

Take Clear *Turpentine*, and *Gum Elemi*, of each one ounce and half; the fat of a *Gelt*, two ounces; *Old Hogs Grease*, one ounce; let them melt at the fire, and make a *Liniment*. Or,

Take *Rosin*, *Wax*, *Turpentine*, *Oyl of Roses*, of each two ounces; *Frankincense*, *Mastick*, *Myrrh*, of each two drams; Make an *Unguent*. Or,

Take *Turpentine* two ounces, *White Rosin*, *Olibanum*, *Colophony*, of each two ounces and half; *Mastick* one ounce, *Saffron* one dram; *Wax* half a pound; *Common Oyl* one pound and half; Make hereof an *unguent* according to *Art*. Or,

Take the Juice new drawn of *Ladies Mantle*, of *Sanicle*, of *Saracen Confound*, of each alike, as much as you think good; set them to the fire, and then add, of old *Swines fat*, and *May Butter*, of each alike as much as will suffice, and make an *Unguent*. Or,

Take *White Rosin* three ounces, *May Butter* six ounces, Juice of *Ladies Mantle* one ounce, *Sanicle Wintergreen*, of each an ounce and half, *Goats beard*, *Oyl of Olive*, of each two ounces. Let the Juices be first boyled with the *Oyl* until the moisture be consumed, then add the *Rosin*, and after that the *Butter*: then let them be strained, and stirred well together until they be cold. Or,

Take the *Herb Wintergreen*, *Adders tongue*, *Sanicle*, *Speedwell*, of each one ounce; flowers of *St. Johns Wort*, and *Centaury* the less, of each six drams: let them be cut very small, and shut up in a *Glass bottle*. Add *Oyl Olive* one ounce, the fat of a *Hog* three ounces, unsalted *Butter* four ounces; let them stand in a hot place, or in *Balneo Maria*, for eight days; afterwards boyl them till the humidity be consumed, and then strain them; after this add *Turpentine* one ounce, *Mastick*, *Frankincense*, & *Myrrh*, of each half an ounce, *Aloes Hepatick* one ounce, and make an *unguent*.

The *Unguent* likewise of *Cesar Magatus* is very useful; As,

Take our *Oyl of St. Johns Wort* one pound, *Wax* washed in *Balsam water* three ounces. Let them melt together in a narrow mouthed *Glass vessell*; when they are melted, ad unto them of our *Balsam* one pound, *Gum Elemi* three ounces; *Balsam of Peru*, *Tacamahaca*, *Caranna*, of each two ounces, (all these *Gums* are to be dissolved severally and apart with our *oyl of St. Johns Wort*). *Ammoniacum* and *Galbanum* in like manner dissolved, of each half an ounce; *Myrrh*, *Frankincense*, *Aloes*, *Gum Hedera*, of each two drams; the Roots of *Confound*, *Birtherwort*, *Bistort*, and *Tormentil*, of each one dram and half, *Cretan Dittany* three drams, *Water Germander* two drams, *Mans*

V v fat



fat prepared two ounces; Swans fat, one ounce; mingle them, and make an Unguent; and keep it carefully in a narrow mouthed vessel of Glass or Silver.

*Balsams.* Oyls and Balsams: natural, as the Balsam of Tolu, of Peru, and the like; and Artificial; as,

Take Oyl of Bayes two ounces; Mastick, Olibanum, Goats sewer, of each one ounce, and Mingle them. or,

Take the yellow that is in the middle of red and white Roser, and white Lilyer, of each as much as wil suffice; pour in unto them Oyl Olive a sufficient quantity; and then set them in the Sun (in a Glass close stopped) for fourteen daies. or,

Take Turpentine, and Oyl of Bayes, of each four ounces, the Oyl of the yelks of Eggs, two ounces; Oyl of Roser half a pound; mingle them, and set them in the Sun, until they shall have gotten a yellowish colour. or,

Take Turpentine one pound; Galbanum, Gum Elemi, Gum Hedera, Frankincense, Mastick, Myrrh, of each two ounces; Aloes, Xyloloes, Galangal, Clover, Cinamom, Nutmeg, Cubebs, of each one ounce, Aqua vite three ounces. Let them be macerated together for a day and a night, and afterward let them be twice distilled; and keep that distilled oyl as a pretious Balsam. Or,

Take the Liquor of the bladders of the Elm defecated and prepared, one pint; the best bonny purified three ounces, Juice of Tormentil, of the greater Consound, and of the mean Consound of each four ounces; mingle them, & boyl them over a gentle fire to the consumption of the Juices; and then ad the following powders.

Take Dragons Blood, Oriental Bole-armenick, Manna thuris, Horse Tayl, Mastick, of each two drams: Mingle them, and make a very fine powder, and ad it unto those things above mentioned.

The preparation of the liquor of the Elm-bladders is thus; in the moneth of May these kind of bladders are to be gathered, before there breed any Worms in them; and with this liquor a glass vial is to be filled up, and stopp with a linen cloth: after this a hole is to be made in the earth, two or three hand breadths in height; and in the bottom of the hole we are to put common salt three fingers high; upon which the vial is to be placed; and then the hole to be filled up with earth, so that the vial appear not; and so it is to stand for twenty five daies: then the dreggs are to be separated from the cleer substance; and that which is cleer is to be kept for use; which if you put of it self alone unto the disjoyned parts, it agglutinateth them.

Another Balsam.

Take Frankincense, Myrrh, Sarcocol, Gum Junip. Gum Arabick, Gum bedera, Gum Elemi, Mastick, Dragons blood, Balsam of Peru, Tacamabaca, Caranna, of each one ounce and half. The tears or sweat of the Fir tree, the liquor of the little leaves of the Elm, of each one pinte; Rosin of the pine, half a pound; Tormentil roots, Roots of Bistort, of Orace, Birthwort, Consound, white Dittany, of each half an ounce; Juniper berries, and Bay berries of each six drams; spirit of the best wine, three pints; mingle them together, and destill them, and receive the water, the spirit, and the oyl, severally and apart; All of them are excellent good for the agglutinating of any Wound.

Another Balsam.

Take the oldest oyl you can get, four ounces; Venice Turpentine ten ounces and half, wheal Wheat two ounces, St. Johns Wort two ounces and half, the roots of Cardus Benedict. and valerian, of each ten drams; the finest smal dust or powder of Frankincense, two ounces; Hypocistis (or the excrescence of Cystus) half a dram; Bolearmenick and Dragons blood, of each half an ounce, the powder of Earth-Worms two drams, the greater Consound one handfull, Horse Tail half a handfull; let the roots and herbs be bruised after a gross manner, and then put up into a vessel; and then pour in white Wine unto them; and after they shall for a while be thus infused, let the oyl and the wheal be added, and all boyled unto the consumption of the Wine. After this pressing and squeezing forth the Liquor with al your strength, ad the powders and the Turpentine, and then suffer it again to boyl a little, and so keep it in a Glass vessel for your use. Or,

Take Turpentine two pound, Common oyl three pints, Oyl of Bayes six ounces, Oyl of Cinnamom, two ounces; Oyl of Euphorbium, oyl of Cloves, and oyl of Bay berries, Gum bedera, Ammoniacum, Sagapenum, Opopanax, Galbanum, of each one ounce; Frankincense, Mastick, of each two drams; Let them be together distilled; and make a Balsam for the Wounds of Nerves. or,

Take Clear Turpentine two pound, oyl of Linseed one pint, Rosin of the Pine six ounces, Frankincense, Myrrh, Aloes, Mastick, Sarcocol, of each three ounces; Mace, Ligne Aloes, of each two ounces; Saffron half an ounce: put al these into a Retort, and first of al let them be destilled by a gentle fire, and there wil come forth a cleer water; and a little after there wil follow a reddish oyl; then augment the fire, ever and anon more and more increasing it, unto the end of the destillation. This being done, separate the oyl from the Water, and keep them both assunder. This water in a short time will become of a reddish colour, and the oyl will be of the color of a Rubie. This oyl is exceeding good

good for Wounds, but especially the Wounds of the Nervous parts, of the bones, and of the Veins: for it Consolidates speedily, and without pain. Another,

Take Earth-worms as many of them as you think fit: put them into a Vessel filled up with the Moss of the wild Sloe-Tree, to the end that creeping through the Moss they may be purged from their filth: add likewise unto them the yelk of Eggs hard boyled, and sliced, that they may serve them for food. Of these Earth-worms thus prepared, take one pound, and let them be well bruised in a Mortar; and then add Oyl of Roses one pinte, boyl them, and afterwards strain them; and unto the straining add of Mustick and Myrrh, of each two drams, the Root of Orace and Sarcocol, of each six drams; Turpentine, and Honey of Roses, an ounce and half; Mingle them. Or,

Take Oyl of Olives, one pinte; Turpentine, three ounces; flowers of St. Johns-wort, Mullein, of each a sufficient quantity, that there may be a Masse made: unto which pour of the best white Wine, a measure and a half; and boyl them til the Wine be consumed. Let the species be afterwards put in the Sun for two months, that so there may be made an Oyl or a Balsam. Or,

Take Roots of the greater Consound, as much as you please thereof; put them in a new Pot, and pour in of the Oyl of Olives unto a good height; boyl them, and press forth the Liquor; the Juyce thus pressed forth, boyl it again so long, until there be none of the Wateriness left remaining, and then afterwards,

Take Of this Oyl, three parts; Oyl of Turpentine, one part; Flowers of St. John wort, and of the greater Celandine, of each as much as will suffice: let them be mingled and melted together, and so put into a Glass Flagon; and so let them stand for forty daies in horse dung, and then you shall have a Balsam, which you are to instill Warm into the Wound. Or,

Take Oyl Olive, a pinte and half; St. Johns-wort, Betony, Prunella or Self-heal, Cennaury, of each one handfull; let the Herbs be bruised together, and with the Oyl let them be shut up in the Glass Vessel; and then set them in the heat of the Sun, for the space of forty daies, there to digest; and afterwards press forth the liquor; which you may reserve for use.

The following Oyl (as Hieronymus Fabricius tells us) is in Spain very much commended, for all Wounds of the Nervous parts.

Take Of the oldest Oyl, three ounces; pure Turpentine eight ounces, whole Wheat, one ounce and half; Seed of St. Johns wort, two ounces; Roots of Carduus Benediſt. and Valerian, of each one ounce; Frankincense pow-

dered two ounces; let the Roots and Herbs be bruised in a gross manner, and put into a Pot; and then pour in so much white Wine that all may swim in the Wine, or at least be covered therewith; and after two daies infusing, let the Oyl and the Wheat be added; and then boyl them all until the wine be wasted away; and presently after having first strongly pressed forth the Liquor, add the Turpentine and Frankincense; then let them be again a little boyled; and kept for use in a Glass Vessel. The manner of using it is thus. The Wound being first washed with cold white Wine, the whole Wound is then forthwith to be anoynted with the Oyl aforesaid a little warm; but if this cannot conveniently be done, it is then with a Pipe or Funnel to be conveyed within the Wound; and immediately the Lips of the Wound are to be brought together so close that they may touch, either by a Ligature, or by sewing, or by Gluing. And then the parts that lie round about are likewise to be anointed with the aforesaid Oyl. Upon the Lips of the Wound now drawn together you are to lay on a Linen Cloth wet in the aforesaid Oyl: and above upon this another wet in black Wine, and then wrung dry, and then upon this another dry Linen Cloth; and then Lastly, upon all the Swathe is to be rolled about, and fastened.

That Oyl likewise which they call the Oyl of Hispana is much commended; and it is thus to be prepared, and made.

The Oyl of Hispana.

Take Old Oyl of Olive four pound, Oyl of Turpentine, two pound; Frankincense one pound, Valerian, St. Johns-wort, Carduus Benediſt. of each half a pound; Eleſt and Choice Myrrh, one ounce; Cutcheoneal, four ounces; new Rosin of the Pine, three ounces; Malmesey three pinter.

Let the Valerian be gathered in the month of May, and cast away the Roots. The St. Johns-wort may be gathered in the month of July, with the Flowers and Seeds. The Herbs therefore being broken with the Hands, and a little bruised in a Mortar, let them be infused in the Malmesey and put into an Earthen Pot covered over with Glass; of which said Pot let the third part remain empty of all those things aforesaid that are put into it, for four hours. In the next place let the Cutcheoneal (a little broken in a Mortar) together with the Oyl, be put upon the rest; and so without any Covering let them boyl by a gentle Fire, until the Wine be well nigh wasted; and here great care must be taken, that the Herbs be not burnt in the boyling. After this let it be taken from the fire, and while it is yet scalding hot let the Herbs be pressed and squeezed very hard in a bag first soaked

soaked in Malmsey. And then let the Vessel in which the boyling was be carefully cleaned; (and yet nevertheless it will not be altogether dried, for there will still be left some of the Wine sticking to the sides) and in the same Vessel let the Oyl be again put to the Fire, with the Oyl of Turpentine, or that that sweats forth of the Fir-Tree; and so soon as ever it begins to boyl, let the Mirrh bruised and beaten very smal be added, and melted in a Mortar with a little of the Oyl that is in the Vessel over the Fire. Let Rolin in like manner be added, melted with the same Oyl; yet nevertheless it must be first strained through a strainer; and then add the Frankincense being very finely powdered; & let al the other things be in the most exact and curious manner mingled together; and when they have boyled a little, let the Vessel be taken from the Fire; and when they are grown cold, let it be kept in a Glass Vessel, without any straining at al; and so let it be set abroad in the Sun, for fifteen or twenty daies.

The Oyl of St. Johns-wort, invented by Magatus.

Cesar Magatus commendeth likewise the Oyl of St. Johns-wort, of his own invention; which is thus with

much labor and pains to be made.

Take the Tops of St. Johns-wort, three handfuls; Adders Tongue, the greater Consound, and Horse-Tail, of each one handful; white Wine well scented and strong, five pints; let the Herbs be bruised and macerated in the said Wine for the space of twenty four hours, the mouth of the Vessel being carefully and close stoppt; and then making an expression, and straining what is so pressed forth, take the like Quantity of the said Herbs, and let there be a second infusion, and after that a third. The last infusion being made, and the liquor pressed forth and strained, Add then unto the white Wine,

Of old Oyl six pound; the Tops of St. Johns-wort, two handfuls, Adders Tongue, the Herb commonly called Meadow-sweet, or Regina prati, the greater Consound, and Carduus Benedict. of each one handful, the Root of white Dittany, the greater Consound, Birth-wort, Tormentile, Bistort, of each half an ounce; Scarlet Grain or Chermer Berry, two drams; Seeds of St. Johns-wort, six drams; and mingle them. Having bruised those things that are to be bruised, let them be macerated in Balneo in hot boyling water, the mouth of the Vessel being well stoppt, for twenty four hours; and afterwards let them boyl in a double Vessel, till the Wine be consumed; and then pressing and wringing forth the Liquor, and straining it through a bag first well moistned in the best white Wine, Add thereunto.

The Tops St. Johns-wort, two handfuls; Adders Tongue, the Herb Meadow-sweet, Consound, Woodroof, (which the Latine Herbarists call Matrifylva) of each one handful; mingle them. The Herbs being bruised, and an infusion made in a Bath of scalding hot Water, or in Balneo Maria, for twenty four hours, and after this an expression being made, and the Liquor strained, (as before,) take the like quantity of the aforesaid Herbs, and make another infusion, as above; and so a third: and the last expression and straining being made, add to the Oyl, Leaves of St. Johns-wort, two handfuls; Betony, Pimpernel, Mouse-Ear, the Herb Trinity, of each one Handful; of these make three infusions, as above; the last expression being made, and the liquor strained, Add unto the Oyl,

Of the smallest Leaves of St. Johns-wort, two handfuls; Consound, the lesser Centaury, white Briony, Periwinkle, of each one handful; and here likewise let there be three infusions in this manner: Let the Vessel (which ought to be of Glass) be set in the Sun for three daies; and the fourth day let it be kept in a Balneum of Scalding hot Water, and there let it continue for twenty four hours; and afterwards make an expression, and strain it; and unto the Oyl let there again be added, The smal Leaves of St. Johns-wort that have attained unto their full ripeness, three handfuls; Centaury the less, one handful; the fruit of the Balsam Tree, in Numb. 6. And then do as before. The last expression being made, and the straining likewise, Add unto the Oyl,

Dittany of Crete, one ounce; Roots of white Dittany, and the greater Consound, Birth-wort, Orace of Illyria, Bistort, Tormentil, of each six drams; Scarlet Grain, two drams. Make three infusions after this manner: set the Vessel in the Sun for six daies, after that for two daies let it be kept in a Balneum of boyling hot water; then press forth the Liquor, and strain it: and thus do three times, (as above) and in the end, the last expression being made, and strained, Add unto the Oyl

The distilled Oyl of Turpentine, of the Gum or sweat of the Fir-Tree, of each half a pound; Seed of St. Johns-wort, one ounce; Root of Consound, Birthwort, white Dittany, Tormentil, Bistort, Orace, of each two ounces; Scarlet Grain, one ounce; Mirrh, and Frankincense, of each one ounce and half; Sarcocol, Gum Junip. Aloes, of each half an ounce; Apples of the Balsam Tree, twelve in Numb. Balsam of Peru, two ounces; slice the Apples, and bruise all the rest, mingling them with the Oyl; and let the Vessel be kept all the Winter time under Horse Dung; then take it forth, and press out the liquor, and straining it keep it for your



your use in a Glasſe veſſel, the mouth thereof being cloſe ſtop't.

The vulnerary Baſam of Magatus.

**The Vulnerary Baſam of Magatus.** Take Gum Elemi four ounces, Baſam of Peru three ounces, Gum Tacamahaca, \* Gum Carrama, the liquor conteyned in the little bladders of the Elm, of each two ounces; oyl of Bayes, *Styrax* liquid, Myrrh, of each one ounce and half; White Frankincenſe, Gum Hedera, of each one ounce; the ſweet ſmelling Laſer, Ladanium, *Styrax* Calamite, (the ſaſteſt you can get) Ammoniacum, Bedellium, Opopanax, Galbanum, Sarcocoll, of each ſix drams; Roots of Birthwort, Maſter-wort, Angelica, White Dittany, Conſound, Acorus, Orace, Tormentill, Biſort, the ſeeds of St. Johns Wort, of the Citron, Citron rind, of each half an ounce, Cinnamon, Cloves, Nutmegs, and Mace, of each one ounce; Miſtick, Aloes, Dragons blood, Scarlet Grain, of each half an ounce; Cretan Dittany, one ounce; the oyl of the oyle Nut Ben, three ounces; Jui niper Berries an ounce and half, Wax one ounce; Roſin of the Pine, one ounce and half; Cleer Turpentine, Gum of the fir tree, of each one pound and half; the beſt ſtrongwater, ſix pints; Mingle them, the Gums being exactly melted; they may be melted apart by themſelves, with ſome of the Turpentine, and the reſt that are more drie beaten and bruised (in a groſs manner) into a powder: and then let them all be caſt together into a Retort, which may be kept for three days in a Balneum of Boyling hot water; then let it be luted and kept in the hot water, untill the Clay be thoroughly dried; afterwards by a fire of Aſhes or embers let the oyl be drawn forth in an Artifici al manner; now firſt there will come forth a certain water, (which I call the water of Baſam, and it is to be kept by it ſelf) and then the oyl, which we call Baſam.

The oyl of St. Johns Wort is here likewiſe of ſingular uſe; and it is thus to be prepared.

**Oyl of St. Johns Wort.** Take the Tops of St. Johns wort fully ripe, three ounces; Macerate them for three days in ſweet ſmelling Wine and then let them boyl in a double veſſel, ſtopping cloſe the mouth thereof; after this let them be ſqueezed hard and the liquor preſſed forth: & then let a like weight of freſh St. Johns wort be caſt into it; let it be again Macerated, boyled and preſſed forth; let this be thrice done; and if the wine be diminished, add other inſtead thereof; after this,

Take Turpentine three ounces, old cleer oyl ſix ounces; Saffron one pound; boyl them in a double veſſel unto the waſting away of the wine and then make an expreſſion; and when

you have purged the oyl from all its ſetling, reſerve it for your uſe.

The Baſam following is greatly commended by Dr. Raimundus Mindererus.

**The Baſam of Mindererus.** Take Turpentine of Cyprus, & oyl of St. Johns wort, of each as much as you think good; let them be melted together; melt likewiſe by it ſelf of Gum Elemi a ſufficient quantity, unto a Juſt conſiſtence, and let it be added unto the reſt. When they are almoſt cold, add a little of the deſtilled oyl of Wax, and Mingle them.

Henricus ab Heer (in his Phyſical obſervations, Obſervat. 10.) highly commendeth this Baſam;

**The Baſam of Henricus ab Heer, for wounds and ulcers.** Take the flowers of Thapſus or ſcorching fenel, St. Johns Wort, the leaves of Prunella or Selfbeal, of each one handful; boyl them in the oyl of the ſeed of St. Johns wort preſſed forth, and old red Wine, of each alike, untill the wine be altogether conſumed, that is, untill that a drop of the liquor caſt into the fire take the flame without any noiſe at all; and ſo keep it for uſe. If you pleaſe, you may often macerate the ſame flowers, and after you have ſet them in the Sun for forty daies, or kept them hot upon the fire, you may again preſſ forth the liquor; which the oftener that you do it, the more efficacious you ſhall find the oyl; add if you think fit the Stone called Calaminaris, made hot, and quenched firſt ſeven times in wine; and then making it red hot, quench it in this oyl.

And yet notwithstanding in the uſe of Baſams (eſpecially if they be hot) there is great caution required, (as Guilhelm. Fabricius likewiſe acquaints us, in his third cent. obſervat. 97.) not only becauſe that the lips of the wound being overſoon conglutinated, the Pus that is afterward generated is kept within, and ſo exciteth grievous ſymptoms; but likewiſe becauſe that thoſe kind of Baſams are not alike and equally convenient for the temperament of all the parts.

Emplaſters.

The Emplaſter of Franciſcus Arcan is of ſingular uſe. As,

Take Oyl of Roſes, of Violets, and of Camomile, of each one ounce; the ſoft fat of a Hen, the marrow of leggs of Veal, of each half an ounce; Earthworms waſhed in Wine one ounce; New freſh butter ſix drams; the Mucilage of Marſmallows half a pound; Boyl them all unto the conſumption of the mucilage, and then ſtrain them; unto the ſtraining add Litharge two ounces and half; vermilion three ounces; with a ſufficient quantity of white wax make a Cerote; adding of Turpentine ten drams, Maſtick half an ounce; or,

Take

Take the new drawn Juice of Betony, Agrimony, Sanicle, Ladies Mantle, Saracen con-sound, of each half an ounce; White wax and Goats sewer, of each half a pound; the best Rosin one pound; boyl them; and in the end add Mastick one ounce, and make an Emplaster, or

Take Wax, Rosin, Pitch, Vitriol, White Frankincense, of each four ounces; Turpentine six ounces; red Myrrh, oyl of Juniper, and oyl of Eggs, of each two drams; Camphire one dram and half; make an Emplaster, adding oyl of Roses as much as wil suffice. or,

Take New Wax, and Rosin, of each one pound; Goats sewer, Hoggs fat, of each three ounces; Turpentine two ounces; Vinegar three ounces; and make an Emplaster. or,

Take Licharge of Silver, oyl of Roses, of each half a pound; Mucilage of Linseed, and of Orace Roots, of each two ounces; Boyl them unto a Just Consistence; and afterwards add Frankincense, and Mastick, of each one ounce; Wax and Turpentine, of each two ounces; and so make an Emplaster. or,

Take Wax three ounces; Rosin and Pitch, of each two ounces; of White Frankincense, Vitriol, Ceruss, of each four ounces; oyl of Juniper berries, & oyl of Eggs, of each two ounces; Champhire a dram and half; Turpentine half a pound; Make an Emplaster.

The following Emplasters are chiefly useful for Prickings.

Take Oyl Olive two ounces; Rosin, Bears fat, Goats sewer, and Bulls Sewer, of each one ounce and half; the fat of a Cowheel, three ounces and half; May butter, six ounces; Licharge of Silver one pound; the scales of Brasse one ounce and half; Mastick one ounce; New wax, or the oyl of the same four ounces; and make an Emplaster according to art.

Raimundus Mindererus likewise most highly commendeth his own Emplaster which he calleth Emplastum opoteldoch magnum Colcothburnum; the description whereof, as we find it extant in his *Treatise of Calcantburnum*, Chapt. 7. is as followeth) of which he writeth that it is the best of all that are known for the healing of new wounds, and the drawing forth of things extraneous that are fixed in the wound; and so likewise in stinking and putrid ulcers. *Viz.*

Take of the newest and Clearest Wax one pound; Cleer Turpentine, (if you had rather) Cyprus or Venice Turpentine, six ounces; Gum Elemi three ounces; oyl of St. Johns wort, oyl of Myrrh of each one ounce and half; let them melt all together; and as so soon as they begin to run abroad, add unto them these things following; of the purest and clearest Gum Ammoniack, Galbanum, Opopanax, of each three drams;

Colophony six drams; Choice Mummy, white and transparent Amber, of each two drams; White Frankincense, Mastick purified, Dragons Blood, Sarcocol purged from its excrements, of each one dram and half; Aloes Hepaticke half a dram; Myrrh one dram; let the Gums be dissolved in vinegar; and let them be joynd together in a fit manner, and according to art, stirring them ever and anon; and when they appear to be almost cold, then by degrees, & warily cast in of the Loadstone prepared six drams; Crocus Martis according to art prepared without a corrosive, and Turty prepared, of each one ounce; Lapis Calaminaris prepared, five ounces; Licharge of Gold one ounce; Colcothar sweetened, or the Earth of Vitriol mortified and dulcified two ounces; let them be according to art reduced into an Emplaster, which when it is cold wil grow to be very hard.

The use thereof is thus; It is over live coals to be tampered with the fingers until it become soft; and then apart of it is to be spread abroad like a Cake, and with the wound is to be covered al over; and daily let it be twice again wiped and made clean, and Malaxed, and so again let it be put upon the Wound; and thus with one small part thereof more wounds then one may be healed.

And then in the Conclusion, the wound is to be shut up with a Cicatrice;

*Epuloticks.* but in what manner the sayd Cicatrice is to be brought over the Wound we have shewn you before, in the second part, about the end thereof; and Certain Playsters likewise made of those things that we but even now mentioned may also bring a Cicatrice over the Wound; when they have first thoroughly healed the same.

Very useful also are those Emplasters that are commended by *Franciscus Arcaeus*, (in his second Book, and fifth Chapter) to wit, the Leonine Emplaster, and the black. The Leonine is thus described.

Take Ceruss three ounces; oyl of Roses half a pound; the Basilique Unguent one ounce; let them boyl together over a gentle fire stirring them all the while with a spatter of wood, even untill that a Cerote may be made, unto which ad of Verdigrease powdered three drams; then let them boyl again, untill they shal have gotten a colour yellow, or somewhat reddish; and then make a Cerote. Of the black Emplaster this is the description.

Take Licharge one pound, old oyl and the strongest Vinegar, of each three pints; Mingle them over the fire, and make an Emplaster.

Chap. 9. *My Judgment, touching the Method of Cæsar Magatus, and Ludovicus Septalius, in their Curing of Wounds.*

And thus, out of what hath hitherto been said, it may plainly appear in what manner Wounds are first of all to be bound up; and what ought to be the first provision and preparation that we make for the Curing of the same. But how and in what manner we are further to order and handle them, I am now to acquaint you. For in very truth, the Ancients who have written of the Curing of Wounds, as also the Chirurgeons who have handled and healed them, do not at all differ in those things that are further to be done as touching the same, (as we shall presently shew you) but they all of them go almost one and the same way. And first of all some years since, *Cæsar Magatus*, Professor of Physick in the University of *Ferrara*, (in his *two B. of a rare kinde of healing of Wounds*, in the which he hath with much diligence and accurateness treated of all things whatsoever that may possibly be said of Wounds) promiset us a new Method of Curing Wounds; such as hath not hitherto been attempted by any; and by which the said wounds may more speedily and happily be Cured, then they have been formerly by the Ancients, or hitherto by any whomsoever. *Ludovicus Septalius* extolleth and defendeth *Cæsar Magatus*, in his *8. B. of Physick Observations, and Animadversions*. There is due unto both these their deserved praise, in regard of their study and endeavour to advance the Art and Practise of Physick, and to free the sick from their Diseases, and the long and troublesom way of Curing the same. And yet notwithstanding I conceive that I shal not in the least offend against the Publick, or the Private good of any, if I shall here in this place, without any detraction, set before you the Opinion of them both, and accordingly weigh them, and tell you my Opinion therein.

And first of all, *Cæsar Magatus* (in his *1. B. of Wounds*, and *33. Chap.*) accuseth *Galen* for having forgotten and omitted an Indication of the greatest moment, and for being wholly taken up with other things that are of far less moment; and there he writeth, that *Galen* was sollicitous, and troubled himself only with the Excrements that were bred; but as for the Cause from whence they are generated, he never so much as minded the same: and that he seemed to desire and re-

quire the wasting of the said Excrements, but then that he took no care at all to prevent the generating of them; to wit, in a word, that he was but little careful as touching the temperament and heat of the part. For if sufficient care be taken for the Temperament and strength of the part; he thinks that then there could not possibly be collected such great store of Excrements that might require this over curious, and indeed hurtful diligence. Now he thinketh that the heat may be sufficiently Cherished and Corroborated, if we prevent and hinder the diffusing thereof abroad, and that we preserve its quality: and that the diffusion thereof may be prevented, if we supply the want of that Natural Covering (such as is the wounded Skin) and this indeed by a Medicament that in its quality comes neer, and is a friend unto the temperament of the part. For so both the heat is cherished, and the quality thereof preserved by a Quality that is like unto it. And from all these premises he concludeth at length, that Wounds are to be more seldom wiped and cleansed then hath formerly been practised; to wit, lest that the heat of the part be hurt by the Ambient Air; but that it ought to be preserved safe under a continual Covering, and so Cherished and augmented; and thereupon he propoundeth a new way of Curing Wounds; touching which we shall now speak something. And indeed what we have already said is the sum and substance of the whol matter: but yet Nevertheless in regard that the Authors now mentioned do treat so largely touching the thing now in question, we shall explain it a little more clearly.

Now the State of the Controversie is this; to wit, whether it be better once (if not twice) a day to uncover and cleanse the Wound; and laying on new Medicaments again to bind it up; or else indeed not to do this above once in seven daies at most. All the Ancient Physicians and Chirurgeons (unto these very times) have followed and practised the former way of Curing Wounds. And as for this latter way of Curing them, *Cæsar Magatus* (in the preface to his first B. of Wounds) tels us that he first of all saw it at *Rome*, which although that at the first he suspected it, and that it seemed unto him to rest and relie upon a weak and infirm Foundation, and to have no very good reason for it; yet nevertheless, that observing daily the rare and wonderful Events thereof, he began with himself strictly and accurately to examine and search into those Foundations and Grounds upon which it rested and relied. And there he writeth that in two things especially he found this new way of Curing Wounds



Wounds to differ from the former common way. The first this, that the Wounds were very seldom opened: the other was this, that in this new way there was no use at all made of Tents and Liniments: of both these we shall now Treat, and speak of them severally.

*Whether Wounds be often, or but seldom to be cleansed?*

Magarus and  
Septalius  
their way  
of Curing  
Wounds.

We will yet notwithstanding first of all propound and set before you their way of Curing Wounds. If a Wound be to be Cured, that is in a Body otherwise sound and of a good habit, and healthful Constitution, (in which there is neither any great Vessel, nor yet any Nerve hurt; but that it is simply in the Flesh; and that there hath flown forth sufficient of the Blood) they then command the Lips of the Wound to be Joyned together, so as that they touch one the other. The Lips being united and brought to touch, they then impose something upon the Wound that covereth it and so cherisheth the Native heat, and withal hath a power and virtue to dry, with some kind of Astringent; to the end that so the Blood that floweth unto the part that is wounded (for its nourishment) may be thoroughly purged from all its superfluous humidity, and brought unto a certain viscosity or Clamminess. And for this purpose, they administer Rosin Turpentine, or Rosin of the Fir-Tree; unto which (if they be more solid) they add a certain portion of Wax, that it may acquire a Consistence. They commend likewise for this end Tacamahaca, which that it may the more easily be spread, they soften it with the Oyl of the Male Balsam Apple, or of St. Johns-wort, a fourth or fifth part thereof. They commend also the Balsam of Peru, unto which (if it be more solid) they give a Consistence by adding of Wax. They use likewise the Juice that is contained in the small Leaves of the Elm, thickned; as also the Cerote Barbarous (as they call it) the Cerote Diapalma, and the Cerote of Betony with Tacamahaca: or some other Emplaster made of the Juices or Decoctions of Vulnerary Plants; adding thereto, Aloes, Sarcocol, Dragons blood, Rosin Turpentine, and Rosin of the Fir-Tree. Of these Medicaments they spread somewhat thereof upon a Linen Cloth that may answer the greatness of the Wound, and may likewise take in somewhat of the adjacent parts; and this they impose upon the Wound. And then upon this they apply as many linen Clothes doubled or

trebled, as are sufficient for the preserving of the Natural heat of the part, and the keeping off the injuries of the Ambient Air. And the Wound being after this manner bound up, they open it not, until the fourth, fifth, or sometimes even the seventh day; and so (as they write) a wound (such as it may be) is now and then Cured with once binding up; and that very frequently two or three dressings do suffice. And yet notwithstanding, that the Linen when it is all foul and nasty may sometimes be taken off, and clean Clothes be imposed in stead thereof, this they allow of; provided alwaies, that this be done without any uncovering of the Wound. And withal they likewise make exceptions in some certain Cases, in which this way of Curing simply hath no place, (but that we ought in those Cases to use the old way of Curing) touching which we shall anon speak further.

And that new way of Curing they prefer far before the former old manner; and first of all they endeavour to prove by certain Arguments and Reasons, that it is both more easie, and more safe: and then by certain Reasons they impugne and oppose that Ancient way; and then Thirdly, they endeavour to weaken and invalidate those Causes that are alleadged by the Ancients, and whereby they seem to be drawn unto the more frequent opening and uncovering of the Wound; and then lastly, they attempt the answering of whatsoever hath been by any objected against this new way of theirs: unto all which we shall speak in order.

And in the first place therefore, that this their new way and Method is both more easie, and more safe also, (and by which far many more have been and may be Cured, then by the old common way) they first of all appeal unto experience: and in special, *Ludovicus Septalius* writeth, touching the Wounds of the Head; that when in a time of great weakness and sickness at *Millain*, in the space of one year very many of those that were wounded in the Head, and were ordered after the old wonted manner (to wit, by often opening of the Wounds, Tents, Liniments, and more frequent Terebrations, and Scrapings) miscarried and perished: and that afterwards this new way of curing being put in practise, to wit, by imposing an Unguent upon the Wound, anointing the Lips thereof with the Oyl of the Fir-Tree, and the wound only twice or thrice uncovered, and but one only Terebration (or piercing with the Wimble) being instituted, of fourteen that were wounded in their Heads there died but only one of them. And *Cesar Magatus* (in his

*whether Wounds  
be often, or but  
seldom to be  
opened?*

1. B. and 40. Chap.) writeth, that the wounds inflicted upon the Head (with the falling in of the bone) within the space of twenty daies were perfectly cured in that manner. And likewise that in the same manner, and in the same space of time a wound of the head, with a cutting of the Membranes, was healed. And that a Wound inflicted on the Head with a Lead bullet shot out of an Engine of War (so that the bullet pierced even to the more inward parts of the Brain before, neither could be found, or drawn forth) in thirty daies, after two or three openings and dressings was perfectly Cured.

I. And then in the next place, *Cesar Magatus* (in his 1. Book Chap. 7.) alleadgeth these Reasons, which we will briefly propound.

*The Reasons that moved Magatus to prefer his new way of Curing Wounds before the old.*

The First is, that this new way of Curing wounds doth best and with the most security perform all those things that are required in Curing. To wit, as for the Native heat, that Nature useth (for suppuration, generating of Flesh, and the glutinating of the Wound) as its chief Agent, (and which by Reason of the effusion of Blood, and the uncovering and wounding of the Natural Covering is dissipated and rendered very weak, and by the external Air is offended and altered) is made more strong and vigorous, whereas in this new way and Method of Curing the Wounds are kept covered. For when the Wounds are but seldom uncovered, that Artificial Covering supplieth the defect of the Natural covering which is the Skin; and so neither the Native heat is scattered and dissolved, neither is it at all altered by the Ambient Air. And for this Reason *Septalius* wondereth that *Galen* should omit this main and principal scope, (which is to preserve the Native heat) and that his care and study is only to take away the Impediments.

And Secondly, He therefore thinketh that Wounds are most happily cured in this new way of theirs, because that in this way those things that retarde and hinder the Cutting of Wounds are soonest and best of all turned and taken out of the way. For whereas one main impediment (among all those other that chiefly hinder the speedy and safe curing of Wounds) is the conflux of Humors unto the wounded part; they think that that impediment is by this their new way best of all prevented. For since that the afflux is caused either by transmission, or else by attraction (by Reason of the pain, and heat) both these are best turned away by this their new manner of curing. For if the Wound be but seldom opened, the heat is then by the

covering preserved and fortified; neither is there any pain excited, as it is wont to happen by the frequent handling and cleansing of Wounds. For all those inconveniences and discommodities are avoided by this new way of curing, whilst that the part is but very rarely moved from its due and proper Situation, is very seldom loosened and unbound, so that likewise there is not often occasion for its binding up; and (as he addeth in the 32. Chap.) if any winde or Humor distend the part, so that there be great pain caused thereby, it is speedily dissipated by the strong and more Vigorous heat.

Thirdly, Of all those things that impede and withstand the Cure of Wounds, the chiefest of them is the exposing of the Wound unto the Ambient Air, by which the innate heat is altered and weakened. But now this is prevented, if the Wound be but seldom uncovered by opening thereof.

Fourthly, whereas *Hippocrates* (in his 2. Sect. of Fractures, Title 7.) commendeth that Cure under which there is little or no impostumation and loss of the bones, this appeareth to be so in this new way of curing; and therefore he determineth, that this is the most perfect; and this *Magatus* proveth by an example of his own; for that in this manner he had Cured Wounds of the Head (wherein there was likewise an extraordinary hurt of the bone, in so much that any one would have Judged that a great part thereof would have dropt out) without any impostumation and abscession of the bone, or any thing else.

Fifthly, He therefore thinketh that this new way of curing is to be preferred, because that under it fewer Excrements are generated then under the common and wonted manner; which (as he writeth) is manifest by experience.

Sixthly, *Cesar Magatus* (in his first B. and 32. Chap.) bringeth this likewise for a Reason: because that those things that are extraneous and strangers to the Body, (and which at the first could not be drawn forth by the Chirurgeons, being such as require the work of Nature,) may more easily be driven forth, if the Wounds be but seldom uncovered; and that for this very Reason, to wit, because that in this new way and Method the Natural heat is more rightly preserved, cherished, and augmented; as was said before in the first Reason.

And Seventhly, in the place alleadged he produceth this for one of his Reasons; that in this his new way the virtue of the Medicament that was administered in the first dressing, is best of all continued and made to endure even unto the perfect agglutination of

the Wound; and especially if it be of such an essence that it cannot hastily be dissipated. And as for those Excrements that usually are here to be found, he thinketh also that it cannot be by them corrupted; since that the Excrements that are generated are not worth a speaking of.

II. They in like manner reject the Ancient Way and Method of Curing Wounds; as drawn thereunto both by experience and Reason. Experience indeed, because that (as is said before) under the Ancient way of Cure fewer Patients, and with far more difficulty, do recover of their Wounds, then under their new way. And as for the Reasons they alleadg, they are these.

*The Reasons moving Magatus and Septalius to reject the Ancient way of curing Wounds.*

The First is this, because that under the ordinary and wonted way of curing, the wounded part is exposed unto the Ambient Air; and by it the Natural heat thereof may be dissolved, offended, and weakened; and that thereupon the part is rendered the more apt and Obnoxious unto a reception of the Afflux of Humors; and the Concoction therein is less happily perfected; and so there are generated greater store of Excrements, that in time prove a great impediment unto Nature in her work.

Secondly, They say, that from this frequent unbinding and loosening of the wound, the handling thereof, and the moving of the part, the cleansing thereof, and the laying on of new Medicaments, and by means likewise of the new binding up, a pain is oftentimes excited, which they say may very well be the cause of a Fluxion. For it can no waies be, (saith *Cesar Magatus*, in his 1. B. and 32. Chap.) but that, while we handle the part, there will be some pain excited; and indeed the greater by how much the greater the Wound is, and the part wherein it is endued with an exquisite sense. For we are forced in the opening of the Wound, and the new binding it up again, to move the part from its former Situation. We take away the Medicaments, we cleanse and wipe away the Pus, we impose new Medicaments, and then we binde up the Wound again: all which operations cannot possibly be performed without pain.

Thirdly, They object, that if the Wound be too often opened and uncovered there will then Exhale much of the heat and Spirits.

Fourthly, and last of all, That Nature also as often as the Wound is loosned and uncovered, so often is she disturbed, and distracted from her proper work and office.

III. *Cesar Magatus*, (in his 1. B. and first Chap.) and *Ludovicus Septalius* (in the 1. B. of his *Physical Animadversions*) after this manner endeavour to infringe those

*Magatus his Confirmation of the Reason of the Ancients, for their often uncovering of Wounds.*

causes and Reasons, for which it seemed necessary unto the Ancients, and at this day doth seem altogether needful and requisite, that Wounds should often be uncovered, and new Medicaments imposed and laid on.

And first of all, this is brought for a common and received opinion, that in hollow wounds there is evermore generated a double kind of Excrements, thick, and thin; as it appeareth from *Galen* his 3. B. of the *Method of Curing*, and 9. Chap. and that therefore we are alwaies so to reckon, that it ought to be thoroughly dried up, and wiped away; and that therefore the Wound is daily to be opened, that so the Pus may be cleansed away, and new Medicaments applied. For those that were at first laid on cannot long keep entire their strength and virtues, in regard that they are dissolved by the heat of the part and also corrupted by the mingling of the Excrements. But if the Excrements be not thoroughly dried up, and purged forth, being retained in the Wound they hinder the generating of Flesh, and the conglutination of the Wound; and become likewise more sharp and Corrosive; Yea further, they often acquire a putridness, from whence may proceed Pains, Inflammations, Impostumations, Worms, and Gangrenes.

### *The Answers.*

Now unto this they thus Answer; first of all, that there is no great danger threatened from the Pus; since that there is no necessity that there should be any great store thereof bred in Wounds, but then only when by Reason of the frequent uncovering of them the Native heat is debilitated. Neither is there any need (say they) that these Excrements should be consumed by the imposing of various Medicaments; seeing that the Wounds of the internal parts, the Liver, the Lungs, the Tongue, and other parts, (in which we cannot possibly come to apply Tents, or Liniments spread over with unguents) they are yet nevertheless healed by Nature. And albeit, (as *Cesar Magatus* writes, in his 1. B. and 44. Chap.) it may be admitted, that two Excrements (to wit, a thick, and a thin) may be generated in the Wound; yet nevertheless he thinks not this a sufficient Reason why the wound should be often uncovered. For the thin Excrement may partly be digested by insensible exhalation; and partly driven quite forth of the Wound by the heat



of the part; and for the thick, there is so little thereof at the very first, that it needeth not at all any Medicaments to cleanse it away; and that after in process of time it is confounded, and becometh one with the Pus, and so is by Nature expelled forth together with the same.

Secondly, For this Cause likewise the frequent uncovering of the Wound is held necessary, in regard that there is sometimes need of Manual operation; since that in the Cavity of a Wound there may be collected many Excrements that cannot possibly be purged forth by any Medicaments; but they are to be cleaned away by the operation of the Hand.

*Answer.* But now *Cesar Magatus* (in his 44. Chap.) denieth this; and there determineth, that the Excrements that are bred in a Wound may partly be insensibly digested by exhalation, and partly by Nature sensibly expelled by the Wound, when there is present a fit afflux, and this no waies hindered, and detained in the Cavity of the Wound.

Thirdly, Wounds are therefore (according to the common opinion) often to be uncovered, that so according to the various State and conditions of them various and different Medicaments may be impoted; first of al, Suppurating or Digestive Medicaments, then Absterfiv, after that such as generate flesh; (and sometimes likewise such as rake away superfluous and proud flesh) and lastly; such as produce a Cicatrice. Al which seeing that they cannot possibly be effected by one only Medicament, therefore the Wound is often to be opened, that so unto every state of the wound fit and convenient Medicaments may be administred.

*Answer.* Unto which Argument *Magatus* (in his 1. B. and 44. Chap.) endeavourerth to give an Answer; to wit, that this is indeed necessary in the old way of curing, but not in his new way; as being such in which the care of the Excrements is for the most part committed unto Nature her self: and in his 37. Chap. he writeth that he is wont to commit the whole work to Nature; and that it is sufficient, that the Medicament serve instead of a covering, and discharge the Office thereof, by cherishing and defending the Natural heat; and that the same Medicament may in all Wounds undergo the Nature of a covering, and serve instead thereof. And he saith that he himself hath observed, that Wounds have been suppurated, thoroughly purged, and filled up with flesh, by the help only of the ordinary and common Digestive. Now he thinketh that the Medicaments cannot perform this any other waies then by their cor-

pulency and bulkiness, whiles that they hinder and forbid the efflux of the heat, and defend the part from all external injuries: but that it maketh no great matter, what quality shal be adjoynd unto this corpulency; especially, in regard that for the most part such Medicaments are made choice of that are of a temperate heat, and most agreeable unto our Nature. And at length *Magatus* concludeth, that by any Medicament of a convenient corpulency, (provided that it be not poysonous, and corruptive, or so sharp and Corrosive that it excite and cause a fluxion) all hollow Wounds that are curable may be cured, and filled up with flesh.

Fourthly, It is therefore also thought that Wounds ought often to be opened and uncovered; that so it may be known, what the effect is of the Medicament applied; and whether or no it be sufficiently drying; whether the Wound be moist, or not, that so the driers may answer in a due proportion unto the moisture; since that the more moist Wounds are to be cured with the drier Medicaments; as *Galen* tells us, in the third B. of his *Method*, and 3. Chap.

*Answer.* But unto this *Cesar Magatus*, and *Ludovicus Septalius* give this Answer, that for the cause aforesaid there is no need at all of this frequent uncovering of the wound, seeing that in this new way of curing the care of the Excrements is not to be committed unto Medicaments, but unto Nature, and the natural heat; and our study must be only how to cherish this Native heat.

Fifthly, And for this cause also the more often uncovering of the wound seemeth to be necessary, that the state of the wound may be known; and that the Symptoms that are wont here to happen may the better be prevented; and those things of which *Hippocrates* maketh mention, 1. *Predist. Text* 18. 5. *Aphor.* 65, 66, 67. 6. *Aphor.* 4. may be sufficiently known.

*Answer.* Unto which they Answer, that al those things may be known some other way, and by other means; as namely, from the itching, the heat, the smel that comes from it, the beating pain, the terrible Feaver, heaviness in the part, and the like: and that evermore the Eyes of the minde are sharper sighted and see more clearly then the Eyes of our Body.

Sixthly, And for this cause likewise the wound seemeth to require frequent opening; that so the Swaths and little Pillows, and the Linen clothes laid thereon may be wiped and made clean: which *Hippocrates* (in his B. of the Office of the Physician, Sect. 2.) and *Galen* (in his *Commentary*) do both of them strictly enjoyn; in regard that the filth

and impurities of the Wound may excite an Itching Pain, and at length an Inflammation.

*Answer.* Unto which *Septalius* answereth, and granteth that the Swaths may indeed be changed, provided that the Wound be not uncovered.

Seventhly, For this cause likewise the Swaths and coverings of the Wound seem to require often changing, that so the hurtful Exhalations that are bred in the Wound may pass forth; in regard that being kept shut in they disaffect the wounded part, and alter the temperament thereof.

*Answer.* But unto this also *Magatus* answereth that there is no necessity that the wounded part should have so many and such Linen Clothes put upon it, neither that it should be so close and strictly bound up, but that the offensive vapors might exhale, and not be suppressed. And that if the *Pus* hath a passage forth, much more then may the Vaporous Excrements be scattered, and find a passage forth: and that should they be still kept in, yet they never bring so much hurt and damage as cometh by the uncovering of the wound.

But in very truth, (that I may briefly shew you my opinion touching this controversie) I will not in the least detract from the Reputation of these men, (*Cesar Magatus*, and *Ludovicus Septalius*) men so Famous and Eminent, that they are not to be so much as named without due honor and respect: and yet nevertheless I shall take the liberty to say, that here in this controversie they seem to me to seek (as we say) a knot in a Bul-Rush: and that there is not any sufficient cause to

*The general examination and inquiry into the Opinion of Magatus and Septalius.*

move them to find fault with that Ancient way and Method of curing of Wounds; and so to extol this new way of their own. For first of all they themselves cannot but confess that in the old way of curing (for so many Ages past) many and the most grievous Wounds have been happily Cured. And then again, neither can they deny this, that that new way of theirs hath place only in a simple Wound, (the wounded person being of a sound and good habit) in which there is neither any great Vessel cut, nor yet any Nerve hurt: and we likewise admit the same for a truth. For such Wounds as these, in regard that they have no danger at all attending them, (and that they may likewise be Cured by Nature alone, without any help at all from Medicaments) we do no way approve of either the Curiosity, or the unreasonable diligence of those that without any urgent cause at all will be often uncovering

the Wound, every day, not once only, but twice or thrice; and we grant also (as a thing very commonly known) that such like slight Wounds (if you lay but a little Lard thereon, or some such like thing, and with one or two bindings up) are cured of their own accord, and by the strength of Nature. But on the contrary, they themselves acknowledge (and of necessity it must be confessed) that there are many wounds in the curing of which there are so many obstacles and hinderances in Natures way, that if they be not removed by the Physician, Nature will never be able of her self to unite the wound, and therefore that simple provision is not sufficient in those Wounds. And they likewise altogether grant and allow of an opening of the Wound, if there be any thing to be done therein that cannot be performed without a Manual operation; and if there be any necessary Medicament to be imposed, and that there be danger in the omission thereof, which they grant ought instantly to be remedied, and prevented all that may be. For if (as *Septalius* puts these cases) the body be Cacochymical, or that some one or other of the greater Vessels be cut, or a Nerve hurt; if withal the flesh shall be battered and bruised, (which may have need of Suppuration) if the Wound hath so narrow an Orifice that the *Pus* hath no passage forth of it; if any bone shall be hurt, or any Noble and principal part uncovered, (so that there shall therefore be need of Manual operation;) if there shall be much *Pus* and Excrements generated in the wound, (from whence a pain, a corruption of the part, an Inflammation, and breeding of Worms may proceed) if proud flesh shall abound; if there shall be present a vehement pain; if an Inflammation or a Gangrene be feared; if any small bone, or any other substance stick fast in the wound that is to be taken forth: or if (as *Cesar Magatus* in his 1. B. and 38. Chap. puts the case) the flesh groweth forth too much; if an Hemorrhage be urgent and require it; if there be nigh at hand a Gangrene and corruption of the part; if there be present an extraordinary putridness and nastiness of the part; if there be many Excrements heaped up & an Inflammation of the part nigh at hand; if any Heterogeneous and Extraneous Body stick in the Wound; if an Impostumation follow thereupon, and that there be present any Pain, Itching, ill savour, or any bones be broken: in all these cases they of their own accord grant that this simple binding up of the wound (in this their new way) will not suffice, but that the other more laborious provision and operation of the Ancients is necessary, and to be preferred before

fore this their new way and Method of curing.

And therefore, since that the exceptions are too many for the Rule, and derogate much from the same, I conceive that this their new way of Curing wounds is very rarely sufficient, and that for the most part many destructive Symptoms and evils (if the wound be not opened until the fourth, fifth, or seventh day) may ensue and happen thereupon. And therefore we likewise willingly grant, that Wounds without urgent necessity are not too often to be opened, and over rashly to be exposed unto the Ambient Air: and yet withal likewise understand me with this caution, that if the Wound be over seldom and but now and then uncovered, cleansed, and necessary Medicaments laid thereon, much damage and danger may befall the Patient. And therefore it is affirmed indeed that this new way of curing Wounds is easier, shorter, less troublesome, and more safe than the Ancient Method: but it is not in the least proved. And be it so, that it is less troublesome, more compendious and short, and likewise more easie; it cannot (this notwithstanding) be proved, neither will it follow, that it is always the more safe and secure way. For who is he that dares (or can safely) admit of this new way of curing, in those deep and narrow Wounds that are by pricking, and by Weapons that have sharp and not thick points; and that will adventure to commit unto Nature such a like Wound, imposing only some covering thereupon, and so not open it before the seventh day? For true it is indeed, that Nature's intention in endeavouring the Conglutination of the Wound is at that time likewise right, as well as at other times and in other wounds; but it may so happen, that the Wound may Conglutinate in the superfluous, before it be conglutinated in the bottom thereof; from whence Pus cometh to be collected in the bottom of the Wound, which bringeth with it many and great dangers; and therefore such a like wound is again to be opened, as sad experience hath often taught us.

But that we may (in special) weigh and consider the Arguments on both sides, we will first of all examine those Arguments that drew those eminent Men (*Cesar Magatus*, and *Ludovicus Septalius*) into this Opinion.

*A more special examination of the Reasons of Magatus and Septalius.*

And First of all, as for the experience they talk of; the Ancient way of curing hath likewise the same to plead for it; seeing that none dares deny, that infinite numbers even of such as have been most dangerously

and desperately wounded have been cured thereby. And yet nevertheless I hinder none; but let every man consult experience, and make inquiry, whether he can find out any thing that is better; yet always provided that what he hath so found out may be practised without any damage or danger unto the sick party. But as for that which *Ludovicus Septalius* alleadgeth (in special) touching the Wounds of the Head, and that many (in a very sickly time at *Milain*) this way recovered thereof; Yea, (as he writeth) more then those that were cured in the former old way; he doth not here sufficiently explain himself, what kind of Wounds these or those were. For of the Wounds of the Head, it is possible that some of them may be mortal, and others of them curable; But *Cesar Magatus*, although he describeth the qualities of those Wounds in the Head, of which he bringeth a few examples; yet nevertheless, he doth not prove this, to wit, that those wounded persons were cured by reason of that new way of curing; and that they might not as well have recovered if the old Ancient way and Method had been practised. For he himself oftentimes very rightly inculcates, and writeth very clearly, that it is Nature that cureth the Wound, and not the Physician, or Medicaments. For if the Pus ought to be moved, this is performed by Nature; or if that flesh be to be generated, and the broken bones to be strengthened by a *Callus*, these are the work and business of Nature. If the Wound be to be Agglutinated, it is she that must do it; and if the Excrements ought to be expelled, this is likewise her Office. And through the strength of Nature there happen Miracles oftentimes in Wounds; Yea (as he proveth in his 37. Chap.) a strong Nature will likewise bear out and overcome the Errors of the Chirurgeon committed in the Cure. And so (no doubt) may those Chirurgeons that still use the old way and Method of curing produce the like examples on their part. That Student that was run through the *Thorax* (his Lungs being withal wounded) of whom we made mention, in the 2. B. of our *Practise*, 2 Part. Chap. 11. and a little above, in the 3. Chap. of the Wounds of the Lungs, was cured within the space of one Month: the cure of which Wound (in regard that it was inward) was chiefly to be committed to Nature; and the cure thereof to be ascribed unto her, and not either unto the old, or the new way of Curing. And *Glandorpins* relateth that a Wound of the *Oesophagus* was in twenty four daies drawn all over with a Cicatrice, as you may find the relation in his *Speculum Chirurgie. Observat. 30.*

And



And indeed I will (in the next place) most readily grant him, that those frequent terebrations (which seem sometimes to be instituted rather for the exercising of the Chirurgeons Body, then for any need the Patient hath of them) are not alwaies safe; and that they sometimes bring more damage then benefit unto the lick person. But yet that the Wounds of the Head are not to be uncovered before the fifth or the seventh day, this I shall not so easily grant him; seeing that such Wounds pass through divers parts: and heap up divers sorts of Excrements; and for the most part there is Blood collected between the Skul and the Membranes of the Brain; which is therefore with al possible speed to be evacuated. For which cause the Terebration also and the perforation of the Skul is sometimes necessary, lest that this Blood if it be kept in putrifie, and so cause grievous Symptoms, Yea, and (as oftentimes it doth) bring Death it self upon the wounded person: which may likewise very easily happen, if those Wounds should seldom be opened and cleansed.

Secondly, The Reasons alleadged by *Cesar Magastus*, (and out of him by *Ludovicus Septalium*), are of no great moment, at least they carry not that weight in them that may persuade the rejecting of the old and usual way of curing Wounds. First, they mainly urge this, (and indeed herein chiefly consisteth the very strength and pith of this Opinion) that the heat of the wounded part is to be preserved: and they accuse *Galen* for that he hath omitted an indication of the greatest moment, and that he hath troubled himself more then he needed in other things of far less moment; and about the generating of Excrements in the Wound: whereas if the innate heat be preserved, there will be but very few Excrements bred, and those that are, will be such as can no waies hinder the glutination of the Wound. Where we willingly grant, and do confess, that Nature as she is the Curer of other Diseases, so she is the healer of Wounds likewise; and that it is she alone (and not the Medicaments) that by the benefit of the Natural heat doth perform this glutination of Wounds; and therefore that the innate heat, and the natural temperament of the part is carefully to be preserved and cherished. And this (albeit that *Galen* hath passed it by in that place where he professedly treateth of the Cure of Wounds; but whether he hath therein done well or ill, I here dispute not;) yet notwithstanding in other places he often inculcates, that there cannot possibly be any curing of the Wound, unless the part obtain its own Natural temper; and those very Medicaments (which are

called Sarcotick) are provided for that very purpose, the Conservation of the heat of the part, as we said before in the precedent Chap. But here two Questions arise; the first this, whether the natural heat be preserved better in this new way, or in that other old and wonted Method of curing; and whether or no there be any necessity that more excrements should be generated in the old way, then in this new manner of curing. The Second Question is this, whether the alone preservation of the Native heat be sufficient for the curing of the Wounds? We deny both. As for the First, it shall be shewn in the following Arguments, that the more rare and seldom opening and uncovering of Wounds is oftentimes more hurtful and prejudicial unto the Native heat, then useful and serviceable thereto; but on the contrary, the more frequent uncovering of the Wound, (and as oft as there is need thereof) is no way offensive unto the Native heat; and that therefore it is not by reason of the uncovering of the Wound, but by reason of the debility of the heat, or the constitution of the part, or the Body, that those Excrements are generated. For when there is blood poured forth in the Wound, from hence it is that the heat and spirit is dissipated, and the part rendered the weaker; from whence it is likewise that in the Concoction that is made in the part there are very many Excrements generated. And that sometimes fewer, and sometimes more Excrements are generated in the Wound, this is not therefore because that the Wound is more seldom or more frequently opened and uncovered, but because the whole Body, and the wounded part are more or less disposed unto the generation of the said Excrements. But as for the Second, to wit, that the innate heat alone is not alwaies sufficient for the curing of the wound, this is apparent; since that there oftentimes to many impediments and obstacles cast in Natures way, that unless they be by the Physitian removed, and that indeed very frequently, even every day, Nature can by no means attain unto her end and drift. The *First* of all, and the Excrements that are collected in the wound, are to be evacuated; and sometimes a passage forth likewise made for them (as oft as need requireth) by Tents; and those Medicaments that cherish the heat, dry up the Excrements, and hinder the generating of them, and help forward the Glutination of the wound, are often to be laid on; since that when they are once laid on they are soon defiled with the *Pus*, and *Sanies*, (that is to say, the thick and thinner Excrements of the wounds) and thereby weakned; and the virtue of them is likewise otherwise dissipated by

by the heat of the part. And albeit that *Galen* (where he treateth of those Medicaments that are necessary for the curing of Wounds) maketh no particular mention (in special) of those Medicaments that cherish and preserve the Natural heat, (which that he ought to have done, I deny not) yet notwithstanding he elsewhere very frequently tells us, that the heat and temper of the wounded part is to be preserved; and that unless the temper of the part be in a right frame and Condition, it is not possible that the Cure of the Wound should ever succeed happily; and those very Medicaments themselves that he often propoundeth for the drying up of the Excrements of the wounds, do Cherish the heat: and as I said in the foregoing Chap. it seems to me, that those Digestive, and Sarcotick, and Glutinating Medicaments, are made and provided, rather for the conservation of the native heat, then for the doing of any thing else.

The second Reason that *Magatus* brings for his new way of Curing wounds, is this, that there cannot be excited any Afflux of humors, since that in this way the heat of the part is preserved, and that by the often handling of the wound there is not any pain caused that may excite a Fluxion. But (as we shall further shew you in the following Reason) the truth is that in this more rare and seldom opening of the wound the heat of the part is not better preserved then in the former old way. But then as touching the pain that may be excited by the more frequent uncovering of the Wound, the Cleansing and purifying thereof, the imposing of new Medicaments, and the new binding of it up, it is the part and office of the skilful Chirurgion so to handle the wounded part, that the least pain (and as little as possibly may) be excited. Neither in the evacuation of the Pus is the part to be pressed down hard together, but the said Pus is most lightly and gently to be wiped away; unless haply the Wound be sinuous and full of turnings. For in such wounds the pressing together of the Sinuous winding part is both useful and necessary; yea moreover, for the better pressing forth of the Pus from the very bottom of the Sinus, there are likewise little pillows or Cushions to be imposed. And then the benefit and commodity that ariseth from that short and momentary pain will not only countervail, but likewise far exceed the discommodity and inconvenience.

Thirdly, Neither is this that he alleadgeth for his third Reason, of any weight or moment; to wit, that in this new way the wounded part is more rarely exposed unto

the Ambient Air, then in the ordinary and usual way. For the good and Benefit that proceedeth from the Cleansing of the Wound and the imposing of Necessary Medicaments, is far greater then the hurt and damage that is brought thereunto by the admission and letting in of the Ambient Air. And this discommodity may likewise in great part be prevented, if the Wound be not uncovered in a cold Air, but in that that is somewhat warm or temperate; and that this be no oftner done then urgent necessity shall require; and that before ever we begin to open the wound, all things Necessary and Requisite for this new binding up be at hand, and in such a readiness, that the whole business may be performed with all possible speed.

Fourthly, Neither is this any sufficient Reason for the preferring of this new way of curing before the old, to wit, that in a wound of the head the bone that was impostumated, and no hopes but that it would be lost, hath yet in this new way been preserved. For it is not as yet proved, that the same might not as well have been in the Ancient way and Method of curing; and it is daily observed, that in the use of the old way, those bones that seemed to be impostumated and like to fall out, have yet again been Agglutinated unto the rest.

Fifthly, *Magatus* affirmeth, indeed, that under that new way there will be fewer Excrements collected then under the Ancient way: but he doth not prove this; and he evermore presupposeth that the innate heat is more rightly and better preserved in the more rare and seldom opening of the wounds then in the frequent uncovering of the same. And we grant indeed, that by the vitious and faulty concoction of the part, many the more Excrements may be bred therein; but this notwithstanding we deny, that these Excrements proceed only from the debility of the heat caused and contracted from the Air; in regard that there may be very many causes thereof, to wit, the abundance of vitious humors in the Body, and the conflux of them unto the wounded part, some of the greater vessels hurt and pouring forth much blood, a contusion and bruising of the part; and many other such like.

Sixthly, Unto the sixth Argument we Answer, and grant indeed, that there is also a more happy expulsion made by Nature of smal bones, and other Extraneous bodies, if the innate heat of the part be strong and vigorous: but then notwithstanding this is yet again to be proved; and it is not to be presupposed, that the Native heat is more rightly to be preserved and corroborated in this more rare uncovering of the wound; as we said

said before, in answer unto the first Argument.

Seventhly, and lastly, *Magatus* alleadgeth likewise this for an Argument (but without any proof at all) that the virtue of the Medicament at first imposed for the perfect agglutination of the Wound will the better endure and be kept insire: touching which hereafter in the causes for which Wounds are often to be uncovered, (in the first Reason) we shall speak further.

And now likewise (in the next place) those Arguments for which they reject the Ancient Method of curing Wounds, are by us well to be weighed and considered. And as for what concerns experience, the question is still in Controversie, and not as yet determined, to whether of these two waies the better is to be ascribed: seeing that it cannot be denied that hitherto infinite numbers have in the old way been cured. And here we are to take special notice, that many things in the curing of Wounds are oftentimes attributed unto Art, and the skil of the Artift, that are rather to be ascribed unto Nature, that is the alone curer of Wounds, as of all Diseases whatsoever. And *Cesar Magatus* himself confesseth, (in his 1. B. and 31. Chap.) that a strong and vigorous Nature correcteth likewise many errors that have been by the Artift committed, sleighting and overmastering those things that might have proved prejudicial unto her through the ignorance and inconsiderateness of the Chirurgeon: and this (he saith) that himself hath frequently found by experience, whiles of set purpose he took little pains, nor much troubled himself thereabout, as being minded and resolved to observe what Nature in those stronger bodies was able of her self to perform: and that therefore he sometimes administered those Medicaments that were not altogether so fit and convenient; and that yet notwithstanding the sick party by the help and assistance of Nature recovered, and became sound again.

But now as for those Reasons that he objecteth against the Ancient way, the first of them is this; that the wounded part is too often exposed unto the Ambient Air, from whence its heat is weakned, and so thereupon great store of Excrements bred and treasured up. But as for this that is so often imputed unto the Ambient Air frequently admitted into the Wound, and that for this cause alone the greater abundance of Excrements are collected, this is only said, but no waies proved. For these Copious and abundant Excrements do not proceed from the Air, but they have other causes. For that small and inconsiderable appulse of the Air (which yet notwithstanding, as I have said, is by all

means possible, and as much as may be, to be avoided, and the operation therefore to be performed in a warm place) it cannot cause so great an alteration. And moreover also, the Excrements are likewise collected, because that the Blood and Humors fall forth of the Vessels are necessarily converted into *Pus* and *Sanies* (that is to say, thick and thin Excrements) although the temperament of the part be sound and unhurt. But that the very temperament of the part may be hurt even by the Wound it self, as also by the cutting and opening of the Vessels, and likewise by the efflux of the Blood and Spirits, is a truth that cannot be denied: and *Cesar Magatus* himself (in his first B. and 9. Chap.) taketh upon him to prove the same at large. And this very weakning of the part (by Reason of the wound inflicted) and the change and alteration of the temperament, is the cause, that not presently and on the very first day the *Pus* is generated in the Wound, but for the most part on the fourth day, to wit, when Nature hath recovered and gotten her strength again, and the heat of the part is renewed. And furthermore, the Bodies on which Wounds are inflicted are not evermore exactly sound and pure, (but oftentimes Cacochymical) albeit they may seem exactly sound; which although they receive but some very light and sleight wound, yet this in these Cacochymical bodies degenerateth into an Ulcer, by reason of the vitious humors that abundantly flow unto the wounded part.

As for what is in the Second place objected, that from the frequent loosening of the wound, the often handling and moving of the part, a pain and thence a fluxion may be caused in the part affected with the Wound, unto this objection we have already before given an Answer. To wit, that the experienced and skilful Chirurgeon may very easily prevent the said pain: and although that some pain should chance to be excited from the uncovering of the Wound; yet nevertheless the inconvenience and pain that would arise from the reteining and not cleansing away of those Excrements might prove far greater, and of a more dangerous Consequence.

Thirdly, *Magatus* (although without cause) feareth, lest that in the uncovering of the Wound there should happen a dissipation of the spirits and Native heat. For if there be any such dissipation of the Spirits and heat, this happeneth together with the very effusion of the blood. But then so soon as this flux of the Blood stoppeth, the orifices of the Vessels do again shut close; so that there needs no fear at all of any such dissipation



tion of the Spirits; and Nature being otherwise sollicitous and careful about the preservation of the Spirit and the Radical heat, expelleth the offensive and hurtful Excrements and still retaineth those that are useful; as we may plainly see it to be done in Critical Evacuations.

Fourthly, and lastly, they object this also, that as often as wounds are unbound and opened, so often is Nature disturbed and distracted from her proper Office and Work. But there is no ground at all for this fear. For Nature cannot in so short a space of time (as while the Wound is opened and bound up again) possibly be disturbed, unless there happen a very great and extraordinary alteration. But it will be rather disturbed, if the Wound be not cleansed from those Excrements.

III. *Cesar Magatus* and *Ludovicus Septalius* do not solidly confute those causes by which the Ancients, and all the Chirurgeons even unto our very times, were moved and drawn unto this often opening and unbinding of Wounds.

For First of all, that they determine and conclude that Wounds are therefore often to be uncovered, that so those Excrements that are necessarily generated may be evacuated; this (say these) is not indeed Requisite, and altogether needful; in regard that the thin Excrement may partly be digested by exhalation, and partly be driven out of the wound by the heat: but as for the thick, (if any such be generated) it is confounded and mingled together with the Pus, and so by Nature expelled together with the said Pus. But experience it self teacheth us that this is most false, that the thin Excrement is alwaies digested by exhalation; seeing that oftentimes we find that it rendereth the Wound exceedingly moist, and that there floweth forth great store thereof. And for the thick Excrement, although it be mingled with the Pus, yet notwithstanding it is not of its own accord wholly evacuated; or if it be evacuated, it is but very slowly; and therefore being retained it acquireth an Acrimony, and so causeth a pain, and a new afflux; and therefore it is speedily and seasonably (before this shall happen) to be evacuated and cleansed away; and for this Reason the Wound is to be uncovered as oft as need shall require. For neither indeed doth Nature her self expel these Excrements. Nature (the truth is) doth separate the useful Excrement from that that is altogether unuseful. But when the Excrements are thus separated, the useful from the unuseful, and stick in the Cavity of the wound, Nature hath then no more that she can do, for it is not in her power to expel them; but the

Excrement either of its own accord, and by reason of its weight floweth forth; or else it is thrust out by the flesh growing underneath it; and this if it be not done, it is left still to remain in the wound. Neither also can the wounded part be alwaies kept in such a Situation, and so placed, that the Pus by its weight tending downward should of its own accord flow forth. For all wounds whatsoever that are inflicted in the fore parts of the Body are altogether unfit for such a Situation as is requisite for a Spontaneous efflux of the Pus or Noisom purulent Matter; seeing that it is no waies convenient, that the Patient should lie upon his face. And so likewise the Wounds of the hinder part, although that they be so Situated that the Pus may easily flow forth from them, yet nevertheless, a lying upon the wounded part is no waies fit and convenient, but painful, and troublesome, in regard that the whole bulk of the Body presseth and weigheth down the part affected. And in Wounds of the Head that pierce through the Skul, it is much more difficult to find such a Situation, that all the Pus of its own accord and by reason of its gravity should easily flow forth, albeit the Wound be but seldom uncovered.

But *Magatus* wil not yet yield for all this, but in the 33. Chapter throughour, of his first B. he endeavoureth to prove that it is not necessary, that Wounds should be often uncovered, to the end that the thick Excrements should be cleansed away; & he endeavoureth likewise to demonstrate, that the thick Excrements, as also the very Pus it self, may be evacuated without the use of Absterfives. And first of all indeed he alleadgeth this out of *Galen*, that he writeth (in the 13. B. of his *Method of Curing*, and 5. Chap.) after this manner. *But if there be some notable Pus contained in the suppurating particle, it is not expedient (as some do) forthwith to cut and make an incision, but rather we ought to attempt an exhalation by Medicaments awayleable for this purpose; the use whereof may be conjectured from the affect it self.* From hence he concludeth, that there is no need of Absterfives, where the Pus may be dissipated by Discussives. But, (that I may not now dispute this question, whether or no we may safely and securely endeavour in Impositumes to waite and consume the Pus with Discussives alone) be it so indeed, that this may possibly be done; yet (as he himself writeth) for the effecting of this there will be need of Medicaments that are strong and prevalent, and fit for this purpose. But when (I pray you) shall such like Medicaments be administered in Wounds, to the end that the Pus may be discussed? He writeth moreover, that in Im-

postumations when they are broken, oftentimes the *Sinus* (though they have been very notable, and such as have sent forth great store of *Pus*) have been filled up with flesh, no Absterfive at all having been put into the Cavity thereof, but only some Medicament laid unto the very mouth of the same; of which it was not possible that any thing should reach so low as the bottom thereof. But unto this I answer, that this is not alwaies done; but that there is oftentimes need of casting in Absterfive Medicaments; or if such may not be administered, that then the *Sinus* is to be pressed together, that the *Pus* may both flow and be pressed forth; and that this is often to be done, and for this Cause the Wound is also often to be uncovered; and that the *Pus* is by no means to be detained in such a *Sinus*. And lastly, He writeth that even internal Wounds may be also cured, although the impurities and Excrements thereof be not cleansed and done away. But I answer, that neither is this alwaies done, but in those parts only in which there are but few Excrements collected, and such as have an open and prone passage forth of them. Otherwise if the Excrements be long detained, those Wounds are not to be Cured; and this we see to be often done in the Lungs, in which from the Excrements retained Ulcers and at length the *Phthisis* or consumption is generated. And indeed, oftentimes the *Pus* and Excrements stick so close and fast unto the sides of the Wound that they cannot possibly of themselves flow forth, but that they must of necessity be cleansed away by a manual operation.

Thirdly, That therefore the Wound is often to be uncovered, that so according to the various state of the Wound, sometimes digestives, and sometimes absterfives, sometimes those that generate flesh, and sometimes again those that waite and eat away superfluous and proud flesh, may be administered: unto this indeed *Cesar Magatus* answereth, that there is no need at all of that change of Medicaments, in regard that the whole business is to be committed to Nature. And that it is sufficient, if there be only a covering imposed upon the wound, that by its corpulency may prevent and hinder the efflux of the Radical heat, and that may preserve and cherish the same, and that therefore with one only Medicament divers times a Wound may be healed. But here false Principles are presupposed. The First is this, that Nature of her self alone is able to perform all those things that are necessarily required for the healing of a Wound. Indeed it is true, that Nature doth concoct, separate such things as are of a heterogeneous and different quality, and generateth flesh; but the Excrements when she

hath separated them, she cannot alone and of her self expel them; but they are oftentimes so pertinacious that they will stick unto the part, do she what possibly she can. Neither do they also flow forth of themselves, and of their own accord; or is the Member indeed so to be placed, that they may of their own accord flow forth, as a little before we likewise told you. And therefore then in that Case there is need of Medicaments that may keep them from being over nasty; yea and oftentimes also of a Manual operation, whereby they may be thoroughly cleansed. Another of his false Principles is this; that Nature in her work standeth in no need of any Medicaments whatsoever, that so she may be holpen and assisted thereby; which that it is false even experience it self teacheth us; wherein we see most manifestly that Digestives that in the beginning are of singular use, in the progress of the Disease prove very hurtful: and this *Cesar Magatus* himself likewise confesseth; for in his 1. B. and 37. Chap. he writeth that he had observed that by the use of a digestive the most grievous Wounds inflicted by Bullets shot from Guns have been suppured, thoroughly purged, and filled up with flesh; but that afterward by reason of the over great humidity there hath grown a flesh upon it that hath wanted Corrosives to eat it out and consume it. His third principle (that by consequence followeth from hence) is likewise false; to wit, that one only Medicament is sufficient all the whole time of the Disease, provided that by its Corpulency it may be unto it instead of a Covering. For if this should be so, and were indeed true, then instead of an Emplaster we may as well put any piece of Leather upon the Wound, or make use of one kinde of Emplaster for another, so that it be not deadly and poysonous, sharp, and Corroding: and yet notwithstanding be never as hitherto heard of any wise Physician that ever did thus. And in this very point likewise *Magatus* expressly contradiceth himself, who (in the 36. Chap. of the same B.) writeth most truly, that not every kind of covering (how ever it be made and provided) is fit for the defence and corroborating of the Natural heat; or that it is convenient for the temper of every part; and that, what is a very fit and convenient covering in one part may in another part be altogether unfit, inconvenient, and indecent, yea likewise that it may be a very hurtful & dangerous covering.

Fourthly, Whereas it is the common Tenet, and that we are usually taught, that therefore likewise Wounds ought often to be uncovered, that so the virtue and effect of the Medicament may be known what it is, and whe-

ther the Wound be moist, yea or no, that so Convenient driers may be laid thereto, according as there shall be occasion; unto this *Cesar Magatus* answereth that there is no need at all of any such ado, or that we trouble our selves so much thereabout, in regard that the whole business and the issue thereof is to be committed to Nature. But he doth not well in so determining. For the truth is, that Nature doth indeed evermore intend that which is best, but yet notwithstanding she cannot alwaies obtain what it intendeth; either because she is weak, or else in regard that she is oppressed and overwhelmed with too great an abundance of that Object on which she acteth: and therefore both the temperament of the wounded part is to be cherished with Medicaments, (and these indeed some at one time, and some at another;) and the Excrements also by which Nature is oppressed and overburthened are to be dried up, and evacuated. And therefore we conclude, that it is overrash and altogether unsafe to Commit the whole business unto Nature, and to stand looking on as an idle Spectator; since that it may easily so happen, that overmuch Humidity abounding in the Wound it may soon degenerate into an Ulcer.

Fifthly, And for this Cause likewise somewhat the more frequent uncovering of the Wound is held to be necessary, that so the State of the Wound may be known, and the Symptoms likely to happen thereupon may be prevented. *Cesar Magatus* rejecteth also this Cause, and asserteth, that from other Signs, (to wit) Itching, Pain, and the feat scent that cometh from the Wound, we may give a shrewd guess; and he positively determineth that an Artificial Conjecture is the best; and that we may more rightly make our conjecture by the Eyes of our mind, then by those of our Body, since that they are sharper sighted then these. But those conjectures are oftentimes very uncertain: yea somethings may now and then happen unto a Wound that will no way be taken Notice of but only by ocular inspection, and such are the *Fungi* of the Brain, Worms in Wounds, and flesh growing upon them. And though it be true that at the length there will some certain signs discover themselves; yet it is no way safe, that the Physician stand as an idle Spectator, until such time as those signs (to wit Pains, Fever, Noysome smells, and the like,) shall happen, and manifest themselves. For when these once come upon the Patient, he is then most commonly in the greatest danger; which by ocular Inspection might have been easily foreknown, and safely prevented: and oftentimes in the space of one day, yea of a few hours, some grievous

evil may befall the sick person. And so *Parvus* relateth, that he had seen Wounds, in which (unless they were daily opened, and new Medicaments laid on) Worms would continually be breeding.

Sixthly, And for this cause also the wound is to be frequently uncovered, that so the Swaths, little Pillows, and Linen Clothes, may be made clean. But *Cesar Magatus* and *Ludovicus Septalius* sleight, and account of this as of a thing of no reckoning: or if we may at any time change the Swaths, they allow it only, with this proviso, that the wound be not uncovered. But these should have considered with themselves, that if the Swaths be foul and unclean, much more the Wound, and the coverings neerer unto the same, must needs be Nasty and unclean; since that the fannies or thin Excrement doth first and most of all defile those things that do neereft touch upon the Wound.

Seventhly, And Lastly, whereas even for this cause the more frequent opening of the Wound seemeth to be necessary (as is also the change of the Swaths, and little Pillows,) that so the stinking Vapors in the Wound, (bred of the Pus and Excrements) may the better exhale, (which if they be still detained & shut up in the wound, they affect the wounded part, and much change and alter the same:) unto this *Septalius* Answereth, that the Wound is not to be bound up with so many and such Linen Clothes that those Vapors should be suppressed; and if that the Pus find a passage forth, he thinks then that those Vaporous Excrements may much rather be blown abroad, and dissipated: and if they be altogether retained that they are not likely to bring so much damage unto the Patient, as may befall him from the uncovering of the Wound, and the alteration of the Ambient Air.

But in whatsoever manner the Wound is bound up, (which yet notwithstanding they themselves grant that it ought so to be bound up, that it may be defended from all external injuries) those Vapors may easily be detained, yea they may insinuate themselves into the Linen Clothes, and the Swaths; and hence they may offend the wounded part by their stench and noysomeness. And this is that very thing that is now in Question, whether all the Pus may be evacuated, unless the Wound be often uncovered. The alteration also that is caused from the external Air cannot be so hurtful and offensive, (in regard that it partaketh not of any ill quality) as is that which proceedeth from those putrid and stinking vapors arising from the Pus and Sanies.



*Whether there be any use at all to be made of Tents, or Pensils, in the Curing of Wounds.*

The other thing wherein *Cesar Magatus*, and *Ludovicus Septalius* dissent from the Ancients, and from other Physitians and Chirurgeons, is this, that they assert, (and endeavour to maintain this their opinion) that there is no use at all to be made of Tents in the Curing of Wounds. *Magatus* to prove this (in his 1. B. and 5. Chap.) useth these Reasons.

*The Reasons that move Magatus to reject the use of Tents.*

The First Reason is this; because that Tents are neither therefore to be instituted, that they may keep open the mouth of the Wound, neither that by

them Medicaments may stick unto the sides of the Wound. The former of these he proveth in this manner, that before the Wound is conglutinated the orifice thereof is alwaies patent and open; so indeed, that if we desire and endeavour it never so much, yet we are not able to shut close the mouth of the Wound. And he thinketh likewise that there is no need of Tents for any other use or purpose, since that the Medicaments may be so melted, that they may very conveniently be instilled into the Wound.

The Second Reason is this, because that they are injurious, and by their weight very troublesome and grievous unto the Nature of the wounded part: whereupon it is likewise that Nature is alwaies laboring to expel them.

The Third is, because that they distend the part, press it together, excite pain, and thereupon produce new fluxions.

The Fourth is, because that these Pensils and Tents may be filled with base corrupt Humors, and so defiled therewith, that they may acquire an ill quality, by which they may hurt the wounded part: and they do moreover hinder the Evacuation of the Pus, and cause that the said Pus acquire and get it self a depraved and Malignant quality.

Fifthly, They say that *Hippocrates* and *Galen* when they write of the curing of Wounds, do never make any mention of these Tents; as we may see in *Galen* 14. B. of the *Metb. of Curing*, Chap. 4. and in *Galen* his B. of *Fractures*, Sect. 3. Comment. 21.

*The Reasons of those that make use of Tents in the Curing of wounds.*

But now on the contrary, Those that make use of Tents, give these Reasons for their so doing. The First is this; that in the wounds the use of Tents is

therefore necessary, that by the help of them the orifice of the Wound may be kept open, and a passage may be made for the Pus to flow forth.

The Second is this, that for this cause Tents are to be made use of, that so by means of them the Medicaments may every where touch the Wound, and that they may penetrate even to the very bottom thereof.

Thirdly, For this Cause likewise Tents seem to be necessary, because by them it may be prevented, that the upper part of the Wound be not closed up before the deeper parts thereof be filled up with flesh.

Unto these Reasons they Answer; unto the First thus, that there will not be more Excrements generated in the Wound (if there be a due Course taken in the curing thereof) then what may easily be expelled forth by Nature. And then that although Excrements should be generated, that yet Tents do rather shut up the passage forth of the Pus, then any waies keep it open. And unto the Second they Answer, that there is no need of Tents, since that the Medicaments (if they be liquid) they will of themselves penetrate unto the bottom of the Wound; neither therefore is there any need of so often repeating and imposing of new Medicaments. Unto the Third they Answer, that the continual efflux of the Excrements by the external wounded parts doth hinder the meeting together and uniting of the Lips, before the Cavity be filled up with flesh.

But that I may briefly shew you my opinion touching this Controversie, I do indeed willingly grant them, that in such Wounds as are

superficial, straight, and such as generate but little Pus, Tents are not at all necessary; neither is the curing of the Wound easily to be retarded by the putting in of the Tents. But if the Wound be deep, and oblique, so that there be no right and straight passage for the flowing forth of the Pus, and that there be much Pus generated; in this Case Tents seem to be altogether necessary, that so by them there may be made an open and free passage forth for the purulent matter; and that a way may be left, by which the Medicaments may penetrate unto the more inward parts of the Wound; and that by this means the orifice of the Wound may be kept from Conglutinating and closing together, until such time as that which is in the bottom of the wound shall be first Conglutinated: which if they be neglected, and that the Pus and Excrements be still retained in the Wound, they may easily prove the Causes of

*The Answer of Magatus unto the said Reasons.*

*By way of Opinion.*

of the extreameſt pains and dangers; as a little above (in the 7. Chapter,) we gave you ſome inſtances and examples of this very thing, out of *Guilhelm. Fabricius* his Obſervations.

*Answers unto the Reasons of Magatus.* Now as for what they Answer unto theſe Arguments, and what they likewiſe object, they are neither of them of any great moment.

For Firſt of all, whereas it is ſaid, that Tents are not neceſſary, that by them the Wound may be kept open, ſince that the oriſce is of it ſelf alwaies open, this we altogether deny. For oftentimes Wounds (according to the various Situation of the Patient, that he then had when he was wounded) are oblique, and full of turnings and windings; ſo that although the ſides and lips of the wound be not as yet cloſed up, they yet nevertheleſs ſo touch and lie one upon the other, yea and oftentimes ſo preſs one another, that there is no open paſſage left for the Pus to flow forth.

Secondly, For this very cauſe, and when the Wounds are not ſtraight, the Medicaments cannot ſo eaſily penetrate unto the bottom. And albe it that the wound be not writhing and oblique; yet notwithstanding it will not alwaies be Convenient to infil into the Wound Medicaments that are over fluid, ſeeing that they may be eaſily waſhed away again by the *Sanes* or thin Excrement: but there will be oftentimes occaſion to make uſe of the thicker and more viſcid ſort of Medicaments, which being conveyed into the Wound by the Tents will ſtick ſo much the longer and more firmly unto the wounded parts; and thereupon they will the more rightly put forth their Virtue and efficacy.

Thirdly, That the ſuperior oriſce of the Wound is never Conglutinated before ſuch time as the inferior Cavity is cloſed up (and that therefore the oriſce of the Wound needeth not to be kept open with Tents) this is falſe; and experience very often teacheth us the Contrary: and *Guilhelm. Fabricius* (in his 4. Cent. Obſervat 7.) reciteth two Examples of Wounds, whoſe oriſces were very ſuddenly healed, and yet the Wound within all this while not cured; from whence it happened, that there was abundance of Pus collected within; and from thence many grievous and dangerous Maladies excited. And whereas they ſay, that the continual efflux of the Excrements will cauſe that the oriſce of the wound ſhall not be cloſed up, herein they contradict their own former preſuppoſals, when as they aſſerted before, that there would be altogether very ſmall ſtore of Pus generated in the Wound.

Fourthly, The Tents ought not neither to be over thick, that ſo they may not preſs the part, nor diſtend it, nor by any means whatſoever cauſe unto it any trouble, grief, or pain, and that they likewiſe ſhut not up the paſſage of the Pus or purulent matter. And if now and then any ſuch thing ſhould happen, (ſuch as that that *Ludovicus Septalius* in his 8. B. of *Animadverſions*, Num. 10. alleadgeth out of *Hippocrates* in his Hiſtory of a certain perſon at *Majilium*) the Errors of the Artiſts are not to be imputed unto the Art it ſelf; whenas haply they uncovered not the Wound ſo oft as was requiſite. And yet nevertheleſs we are here to give you to underſtand, that albe it we are to uſe our utmoſt endeavour, that Wounds may be Cured without all kind of trouble and pain; (or at leaſt that they may be healed with as little as poſſibly may be;) yet notwithstanding it is not to be expected, that in the curing of Wounds there ſhould be at any time a total and abſolute freedom from all pain and trouble, no more then there is in the curing of other diſeaſes. And indeed if all things were to be omitted and forborn that are any waies the Cauſe of any trouble whatſoever; then the ſewing of the Wound, as likewiſe the Swaths, and binding up of the Wound were all of them to be omitted. But the Rule is good in this caſe, that alwaies of two Evils the leſs is to be choſen.

Fifthly, Neither are Tents therefore to be omitted, becauſe that being defiled by the Pus they may hurt the wounded part. For as often as they ſhall be thus fouled and made naſty, they are to be drawn forth; and this very thing impugns the rare and ſeldom opening of the Wound.

Sixthly, And laſt of all, although that *Hippocrates* and *Galen*, where they treat of the Curing of Wounds, do not make expreſs mention of theſe Tents; ſo neither yet do they forbid the uſe of them: but rather out of the precepts of *Galen* as touching the Curing of Wounds it may be proved, that the uſe of Tents is oftentimes by him allowed and approved of.

All the premiſes being therefore thus agitated and diſcuſſed *Pro* and *Con*, the thing ſeems to come to this; and the whole ſum and ſubſtance of this Controverſie amounteth to thus much; that light and ſleight Wounds, and ſuch wherein there is not much Pus generated, may be committed unto Nature; and that it matters not much if ſuch Wounds as theſe be but ſeldom concured. But yet I would not in the leaſt perſwade any Man, that in thoſe Wounds that are more grievous, and in which there is generated great ſtore of Pus and Excrements, he ſtand as an idle ſpectator,

Spectator and Trifler, doing little or nothing himself, but committing the whole business to Nature; in regard that from the neglect and omission of the necessary opening of the Wound, there may more danger and damage arise in one day, then can afterwards be removed in a whole Month.

And so likewise for Tents: as on the one side where there is no need of them, I would not persuade to the putting of any into the Wound, (much less that there should be such Tents made use of that may cause pain, excite a fluxion, or hinder the flowing forth of the Pus;) so on the other hand, where necessity urgeth, and the Caules before mentioned require the use of them, there I conceive they cannot possibly be omitted without damage and danger. But yet nevertheless in regard that experience perfecteth Art, (example shewing us the way;) I shall not withstand or oppose any man in his making trial and experience even of this way likewise, so that it be (as I have said before) without any danger unto the Patient; and as *Magatus* himself adviseth, (in his 1 B. and 40. Ch. about the end thereof) beginning alwaies from those more light and easie, and from these by degrees proceeding unto those that are more grievous and difficult.

### Chap. 10. Of the Weapon Salve.

Those things that have been (in the precedent Chapter) spoken touching the opinion of *Cesar Magatus* and *Ludovicus Sepulchus*, as concerning the curing of Wounds, put me now in minde of that Unguent they commonly call the Weapon Salve. For as those simple Wounds of the flesh (as hath been said in the foregoing Chapter) are Cured by the benefit of Nature alone, without any other great provision, without any frequent opening of the Wound, and without the applying of many Medicaments: So those Wounds likewise that are said to be cured by this Weapon-Salve, my Opinion is, that they are cured by the help and assistance of Nature alone. But in regard that there are many who have asserted the contrary; therefore we think it not amiss in this place to make some enquiry into this Opinion of theirs; and to tel you what I conceive is to be thought as touching this Weapon-Salve.

Now we shall First of all give you the descriptions of this Unguent or Weapon-salve; and then we shall acquaint you with the use of it, and what Arguments are usually brought for the defence thereof. Now most are of Opinion, that *Paracelsus* was the first that

found out this Weapon-Salve, and therefore the invention thereof is by very many ascribed unto him; but whether he were the first that we find to have made mention hereof or not, of this there is no question, but that he hath been very forward in the divulging of it.

*Paracelsus* himself (in his 1. B. *Archidox. Magicæ*) hath this description of it.

Take The Moss of a Dead mans Skull, two ounces; Mummy half an ounce; Mans fat, two ounces; Mans blood, half an ounce; Oyl of Linseed, two drams; Oyl of Roser, and Bole Armenick, of each one dram; mingle them, and make an Unguent.

*Paracelsus his description thereof.*

Into which he puts a piece of Wood that hath been soaked in the Blood that comes from the wound, and then thoroughly dried; and every day constantly he covereth the Wound with a new Swathe that had been thoroughly moistened in the Urine of the wounded person. But then for the anoynting of the Weapon, he addeth yet further, Honey, one ounce; and Bulls fat, one dram.

*John Baptista Porta* (in his 8. B. of *Natural Magic*, and 12. Chap.) writeth thus of it. The Weapon Salve (saith he) was a good while since by *Paracelsus* given to *Maximilian* the Emperor; who having made trial of it esteemed it very highly all his Life after: of which there was some bestowed on me by a certain noble person then living in this Emperors Court. If the Sword that gave the Wound were brought, or a piece of Wood wet in the blood of the said Wound, the wounded person was then cured, albeit he were never so far off.

Take Usnea, or the Moss that groweth upon a skull left in the open Air, and mans fat, of each two ounces; Mummy and mans blood, of each an ounce and half; Oyl of Linseed, Turpentine, and Bole Armenick, of each one ounce; let them be all well mingled together in a mortar; and then preserved in an Earthen Vessel somewhat long and narrow. Dip the Sword into the Unguent, and so leave it; let the wounded person in the morning wash the wound with his own Water; and so adding nothing at all thereto, let the wound be bound up; and it shall be cured without any pain.

*Porta his description of the weapon salve.*

And *Crollius* himself likewise attributeth this Unguent or Weapon Salve unto *Paracelsus*; and he calls it the Sympathetick Unguent of *Paracelsus*; and thus he describeth it.

*Crollius his Description.*

Take the fat of a Bore Pig or Brawnner, and Bears fat, of each four ounces; The older these Creatures are the better is their fat. Let both these fats first of all (for the space of half an



an hour boyl in red wine over a gentle fire. After this it is to be poured out upon cold water and the fat swimming a top is to be taken off with a spoon, and whatsoever sinks to the bottom throw it away. Then afterwards,

Take, of Earth worms washed in Wine or Water, two sextaries; let them be put for a while into the Bakers oven in an Earthen pot covered, where as they must be baked, so you must have a great care that they be not burnt; and after this, beat them into a powder.

Take Of this Powder, the dried brains of a Brainer, Red Saunders that smells sweet, Mummie, and the Hematites or Blood stone (as he calls it) of each one ounce. After this,

Take Usnea, or Moss from the skul of one that died a violent death, let this Moss be cut off from the skul in the increase of the Moon, and she being then in a good house, as that of venus (if it be possible) but not of Mars, or Saturn, the weight of two filberds or thereabout. And all of them being bruised together, and well mingled with the fat, let there be an unguent made according to art; and then in a Glass vessel stopt (or if you think good, in a Box) let it be carefully kept for use.

If after long time the unguent happen to be over dry, it may be a new moistened and softened with the aforesaid fat, or virgin hony. Let the Unguent be made, the Sun being in the sign Libra.

**The Use of this unguent.** Now as touching the Efficacy and use of it, he thus writeth: This cure is performed by the Magnetic attractive virtue of this Medicament, caused by the constellations, which thorow the medium of the Air is brought unto the wound, and Joyned therewith, that so the spiritual operation may be drawn forth into effect. Its wrought (I say) by means of the Astral and Elementary conjunction.

There are therefore three things that by this unguent cause so admirable an Effect. 1. The Sympathy of Nature. 2. The influence of the heavenly Bodies, perfecting their operations by the Elements. 3. The Balsam, which being endued with a virtue of healing is naturally applied unto any man, without any difference. With this unguent are cured all Wounds, by what weapon soever they be inflicted, and whatsoever the sex be, (and yet so notwithstanding that neither the Nerves, Arteries, nor yet any one of the three more principal members be hurt) so that the Weapon may but possibly be had, although the patient be many miles distant from us. And in regard that it is of a Conglutinating, Suppurating, and renewing Nature, it doth not permit (if it be rightly applied) any hurtful symptom to follow upon it.

**The manner of applying the unguent, or weapon salve.**

First, Let the Weapon wherewith the man is Wounded be anoynted every day once, if necessity require it, and the wound be great: but otherwise it will be sufficient, if the Weapon be anoynted every other, or third day; and then let it be kept in a Clean Linen Cloib, and in a place a little warm but not too hot, lest that any damage should thereby be brought upon the Patient: We must likewise be very careful that the Weapon fall not down from on high, neither that the wind blow upon it in a cold place; for if this should happen the Patient wil run mad.

Secondly, Before you anoynt the Weapon, Consider, whether the Wound were made with the point, by pricking: and if it were, let the Weapon be first anoynted upwards, (and not below) and so descending toward the point thereof; for otherwise much hurt may be brought upon the Patient.

Thirdly, But if thou canst not certainly know how deep, or in what manner the Weapon entered into the flesh, thou mayst then anoynt it all over; but otherwise it will be sufficient to anoynt that part of the Weapon wherewith any one is hurt.

Fourthly, There is no Necessity of sewing the wound together after the manner of Barber Surgeons; but every day only to bind it up with a clean linen Cloib, first wet in the Patients Urine.

Fifthly, That day that anyone anoynts the Weapon, let him abstain from Venery.

Sixthly, Before the anoynting of the Weapon, let the Wounded persons blood be with all speed stanchd.

Seventhly, In fractures, and ruptures of bones, you may add unto the unguent some of the powder of the greater consfry, or the roots of black Hellebor.

Having the weapon wherewith the Patient was hurt, if thou be desirous to know whether the Patient be likely to live, or to die of his Wound; thou art to make the trial in this manner. Take the weapon and make it hot over the coals, so hot that thou can hardly endure thy hand upon it; and then sprinkle upon it some powder of Red Sanders, and the blood stone; and if the Weapon then sweat drops of blood, the patient will die; but if not, he wil escape it.

But if we would know whether the Patient order himself aright in his drink and other Requisites: this may thus be known, if there be in the weapon spots of blood, he is disordered; but if no such spots, then the Patient ordereth himself aright.

We are moreover to take notice; first, that if we have not the Weapon, (or instrument whatsoever it were) yet nevertheless that any violent opening

opening of the Skin, and bursting of the flesh, by which any Blood goeth forth, may be Cured with this unguent, so that a little piece of Sallow Wood be moistened in the bloody opening; and after that the Blood sticking thereto be dried (not by the heat of the Sun, or the fire, but of it self, and own accord) it be then put into the above mentioned Unguent, kept close covered in the Box, and there left.

Secondly, If the Wound should be great and deep, it may then be cleansed every morning, and bound up with a new Linen Cloth, without any other use of Extraneous Oyls, Unguents, and the like; and then this wound (how ever it were inflicted) will heal of it self; and it sufficeth that the little piece of Wood once only moistened in the opening of the Bloody wound, be then put into the Box of Unguent (as aforesaid) and there left to remain, until the Wound be perfectly Cured.

Thirdly, But yet notwithstanding, as oft as any new Wound is to be healed, there is always required a new piece of Wood.

Fourthly, But if it be so that the Wound will not bleed, it is then with the Wood so long to be scarified, until the blood flow forth: and so likewise in the curing of the Tooth-ach; the pained Tooth is so long to be scraped with a Pen-knife, until it bleed; and then the Pen-knife after the blood is dried up, is to be anoynted with this Unguent; and so the pain is presently asswaged. If a Horse be prickt with a Nail in his Foot, let the Nail be first of all drawn forth, and anoynted with this Unguent; and the Horses Foot shall immediately be cured, without any suppuration at all.

And so in this same manner all living Creatures having flesh and Bones may be Cured.

The description of Gabelchoverus.

Oswaldus Gabelchoverus (in his *Practica Germanica*,) thus Describeth it.

Take the fat of a Boar, and of a Bear, of each one pound; and these being melted be poured into red Wine. Unto this fat be added powder of the Blood-stone, one ounce; Red Sanders, six ounces; Earth-worms prepared two drams. Usnea or Moss of a dead mans Skull, as much as may be gotten; and then be mingle them, and make an Unguent: touching the use whereof be writeth almost the very same that Crollius doth.

Another Description.

Others have this Description of it.

Take the Lard of a Bawner (melted on the fire, and poured forth upon cold Water) as much as you think good; the powder of prepared Earth-worms, the powder of the Blood-stone, and of Red Sanders, and Usnea or Moss of a mans Skull, of each as much as will suffice, and mingle them at the Fire.

Jobanner Wittichius leaveth out the Usnea or Moss, and he thinks the matter not great, whether it be put in, or left out of the Composition. Neither doth he add the Mummy, or the fat, or the Blood. And this others likewise do. And I my self knew one, who undertaking such a Cure, Compounded (as oft as he pleased) this Unguent only of the fat of a Porker, and a few other things, without any of the said Usnea, or any thing else taken from the Body of Man.

That Polypragmatick Jobannes Colerus (in the 18. B. of his *Oeconomy*, and 154. Chap.) gives us this Description.

Colerus his Description.

Take the fat of a Brawn, and of a Bear, of each half a pound; Moss of a Mans Skull, one pugil; Earth-worms, one quart; Blood-stone, two ounces; Red Sanders, and Root of the greater Consound, of each three ounces; mingle them, and with Wine make an Unguent.

Neither do they all agree as touching the time wherein they would have this Unguent to be made. Crollius requireth the preparing of it, the Sun being in the Sign *Libra*. Others do include this time within narrower bounds yet; and they will have it to be only the tenth and eleventh day of September. But others there are that allow us any time for the providing of it.

But now as for the manner of using this Medicament; it having been so fully and largely described and set down before out of Crollius, I hold it needless here to repeat it.

The Sum is this in a word; the wound it self is not to be anoynted with this Unguent, but the weapon, or the instrument wherewith it be wherewith the wound is inflicted: or if this cannot be had, then any other weapon, or wood, (but more especially that of the Sallow Tree) or any thing else put into the Wound, and there died and stained with the blood of the wounded person. And they likewise conceive that it matters but very little, (or not at all) whether the wounded party be present, or many miles distant; neither have they any regard at all unto the wounded person, but only unto the weapon, that this be anoynted. But yet nevertheless; some there are who give in charge likewise, that the Wound be every day washed and made clean with Urine or Wine.

But now lest any one should doubt of the effect of this Medicament; they first of all appeal unto Experience: and *Rudolphus Goclenius* the younger writeth that he is able to nominate Emperours, Kings, Princes, Earls, and Lords, (whose Authority and Credit was no way to be called in question) that

that were ready to give their testimonials touching the efficacy of this Unguent.

*Reasons alledged for the Weapon-salve:* Moreover the Patrons of this Unguent think (as they tel us) that there may be natural causes rendered of this Action. And *Crollius* term al ignorant and simple that doubt of the efficacy of this Medicament, or that refer this Cure unto Sorcery. But now that they may prove that this Cure may be performed in a Natural way, they first of all take a great deal of pains to prove, that there are some actions to be instanced in, that are not wrought by the intervening of any Corporeal contact, but by an occult Sympathy, and *Magnetism* (as they call it.) And so the Load-stone draweth Iron, albe it that it touch it not corporeally; and it is moved toward the Pole. The Stars do also Act upon these inferior Bodies, without any the aforesaid Contact. The *Torpedo* or Cramp-Fish affecteth the hand of him that holdeth the Spear. There are some likewise that can by no means endure to be in the Room with a Cat shut up in a Basket; and although they see her not, yet they can by no means brook her presence; so that, unless either the Cat be carryed forth, or themselves removed into some other Room, they presently fall into swoounding fits. Dogs likewise know their Masters foot-steps, as also the treadings and traces of wild beasts, by which they follow and pursue them. The shade of the Yew-Tree is very hurtful unto mankind. And very many more of such like instances and examples that may be observed in Nature, they heap up, to prove that there may be Natural occult Actions without any Corporeal Contact: which (because that they are most manifest in the Load-stone) therefore from it they cal them all in general Magnetick Actions.

Another thing that they presuppose and take for granted, is this, that there is a certain spirit of the world, diffused al the world over; which spirit (say they) is the Director and Vehicle of al occult powers and Actions; and which conjoyneth and keeps together all the parts of the world; and causeth a sweet and admirable agreement and harmony between them.

But Thirdly. As for what concerns the virtues of the *Weapon-salve*, they tel us that there is in it a two-fold virtue, one in the Unguent it self, to wit, of Consolidating and agglutinating of the Wound; and the other that is in the *Weapon* anoynted, & which carrieth that power unto the wound. They derive this former virtue from many things of which this Medicament is compounded, and from the influence of the Constellations,

as also the Astral and Elemental Conjunction. And therefore (as we told you before) some there are that never make this Unguent but at such a certain time of the year, and position of the Stars. But the other virtue they derive from the Natural Balsam, which together with the Blood sticketh upon the Weapon or instrument pressed upon the Wound, but first besmeared with the Blood of the wounded person. For this Balsam (say they) by reason of that Sympathy it hath with the Wounded part communicateth unto the Wound the said virtue of the Medicament, by the Mediation of the Spirit of the World. And for the confirming of this they produce likewise other examples. The *Zemith* (as they term it) of young Maidens being cast into the fire (they say) very grievously hurteth the virgin from whom it came; and that the *Secundines* (or after births) if they be ill handled wil cause great damage and danger unto that Woman out of whom they flowed. Although they do not likewise here sufficiently and clearly explain themselves. For *Crollius* writeth, that this Cure is performed by the Magnetick attractive virtue of the said Medicament caused by the Constellations; which virtue (say they) by the *Medium* of the Air may be brought unto the Wound, and conjoynd therewith: and then immediatly he addeth that there are three things that by this Medicament Cause so admirable an effect. 1. The Sympathy of Nature. 2. The influence of the Celestial Bodies, performing its operations by the Elements. 3. The Balsam, that being endued with a healing virtue is Naturally put upon any one whatsoever, without any distinction of either Person or Sex.

But in very truth (that we may briefly open unto you, and shew you our Opinion touching this Unguent) that which in the first place rendereth it very suspicious,

*Reasons against the defenders of the Weapon-salve:*

is this, that they give us not one only way for the composition of this Unguent but very many; and in some of them those things are omitted and wholly left out, from which others derive al the virtue of this Medicament; as is apparent from the many descriptions above mentioned. And so *Witchius* leaveth out of the Composition the *Usnea* or moss, the Fat, and Blood of man; which yet nevertheless others make the very Basis, and Foundation of all the virtue of this Medicament; and it is with them the principal part thereof. And yet nevertheless they will all of them promise you the very same effect: and every of them extollet his own as fit and proper for al Wounds, whatsoever the Weapon be wherewith they



are inflicted; and whether they be by pricking, or by Cutting, or by any thing cast at the party, or by a fall; albeit that *Goclenius* indeed and *Crollius* do except those Wounds that are in the Nerves, Arteries, or any of the more principal Members, as the Heart, Brain, &c.

What others object against the Composition of this Medicament, to wit, that the Authors of this Unguent require the *Usnea* or Moss that is cut off from the Skul of a Man hanged, as also joyning therewith Mummy, Mans Blood a little warm, and Mans fat, and that in the Mans Blood and fat they think the marrow and pitch of the whole business (that is to say, the whole virtue of this Unguent) to consist; which these Judge to be superstitious; this Objection I no waies own, neither will I defend it; it being so well known, that Mans fat, and Skul, Mummy, and *Usnea*, are made use of by other Physicians (without any superstition) in the Curing of Diseases. And yet notwithstanding of this I must here admonish you, that (seeing that Magicians and Wizards (as will appear out of *Aputeus* upon the 2. and 3. B. of *Ovids Metamorphosis*; and *Nicolaus Kemigius*, in his 1. B. of *Demonology*, and 6. Chap. and 2. B. Ch. 1. and others also that have written of witches and Sorcerers) seeing (I say) that these are wont in their sorcery to use Mans Blood and Flesh, and other parts of Mans Body, every one ought to be careful (who will make use of such Medicaments) that he do not superstitiously use the said Medicament, for the procuring of a Natural effect; and so thereby gratifie the Devil, (who is the enemy of Mans both Soul and Body) and so unawares do him Service; which may be done, if he use such Medicaments for those effects that are not in the Natural power of those things; and therefore if those effects shal follow, they are to be imputed and ascribed unto the Devil, (by such like superstitious practises laying snares for mankind,) rather then unto the thing it self.

As touching the effect of this Medicament; that it doth not evermore answer the desire and expectation, we are shewn by *Gualbel. Fabricius*, in his 3. Cent. and 25. Observation. And be it so, that (as many great and eminent persons have testified) divers who have made use hereof have recovered: yet nevertheless these can attest no more but this, that the person was wounded, that unto him there was administrated this kind of Cure by the Weapon-Salve, and that this person recovered: but that he recovered by the virtue of this Medicament, this they cannot testifie. For there may be oftentimes many things conjoynd with some effect, that are not the Cause thereof. And there-

fore, as it doth not follow, that such a person walking it Lightened, therefore his walking was the cause of the Lightening; so no more will it follow, this wounded person was healed, and he applied the Weapon-Salve, therefore the Weapon-Salve was the cause of the cure; unless it be demonstrated, that from the said Unguent this effect necessarily followed. And in nothing indeed is the fallacy of the cause more frequent then in Physick; where oftentimes the healing of some Disease is attributed unto this or that Medicament; whereas the truth is, it proceeded not from the said Medicament, but either from Nature her self, or else from such other Medicaments as were administrated before, together with, or after the said Medicament whereunto the Cure is ascribed. And a very great difference there is between Physick and other Arts. For in other Arts the effect being upon something that is solid dependeth wholly upon the Artificer: and if there be any thing well or ill done by him, all this is to be imputed and ascribed unto the Artiff, unless it so fall out, as happily it may, and often doth, that by reason of the unfitnes of the subject matter, (for as we use to say, a Mercury or Statue is not made of every piece of Wood) or else by reason of some fault in the Instrument, somewhat may happen to be done amiss; since that, as we told you before (in the first B. of our Institutions, and 1. Chap.) the subjects of other Arts do nothing at all, but only obey the will of the workman: whereas in Physick, the subject matter thereof hath a certain innate power; by which (being assisted by the Physician) for the most part of its own accord it tendeth unto health: from whence it is that by *Hippocrates* (6. Epid. Comm. 5. Text 1.) they are said to be the Curers of the Diseases of Nature.

So that the whole business in short comes to this, that the State of the Controversie here is not, whether in a person wounded, and recovered again, the Cure were done by the Weapon-Salve; but this, whether or no the Weapon-Salve were the Cause of the healing of the Wound; touching which we are now to make a little further enquiry.

Now it being so that Nature (as we shewed you above) is the Cause of the Wounds Conglutination, but without the virtue of any Medicament, (under what Notion or Consideration soever,) and that oftentimes likewise even by Lard (or some other thing of no great moment) laid on, many Wounds without the help of any other Medicaments, or any assistance from the Physician, have been Cured; therefore, in the Cure likewise that is by some thought to be done by this Weapon-Salve,

Salve, the Conglutination of the Wound is to be ascribed unto Nature alone, as the next and principal cause. Which being so, and the truth thereof being such that it cannot be denied, now in the next place we are to enquire, whether in the said Cure the healing of the Wound be to be ascribed unto Nature alone; or else indeed whether or no there be not likewise some Concurrent efficacy of the Weapon-Salve. Unto me the former seemeth the more probable, therefore, because that it is a truth most certain (as but now we told you) that Wounds are oftentimes Cured by Nature alone without the Concurrence of any Medicaments; the truth whereof is sufficiently attested likewise by internal Wounds, unto which there cannot possibly be any Medicaments administered. And hitherto tendeth the whole business in the curing of Wounds (according to *Cæsar Magatus* his way, touching which we have spoken in the foregoing Chapter) to wit, that the whole work be committed to Nature, that the heat and temper of the part (it being the instrument) be kept entire, and that without urgent necessity it be not molested and disquieted by Medicaments. And sometimes we see that such dangerous Wounds chiefly and especially by the benefit of Nature, without the application of any Medicament, (or such as is of no great moment) are cured; so that it seems to be ascribed rather unto a Miracle, then the Medicaments. Of which very thing the Observations and Examples are every where sufficiently known. Neither yet notwithstanding are the Parrons of this Unguent so bold as to extend the virtue thereof unto all Wounds; for (as a little before we told you) *Crollius* and *Goclenius* do except the Wounds of the more principal Members, as also of the Nerves and Arteries: and there was never yet found any that durst make use of this Unguent in Wounds caused by Gun shot. And who is there that dares deny that other lighter and sleighter Wounds may be cured by Nature alone? And if any thing extraordinary, and that which seemeth to exceed the power of Nature, happen at any time in the said Cure by the Weapon-Salve, we ought well to consider, and look unto it, whether it be not wrought by the assistance of the Devil, thereunto engaged by a Compact and agreement, either explicite, or implicite.

And now therefore it being a known truth, that Nature alone (and as the next Cause) may agglutinate Wounds, and that Medicaments (as above we shewed you) do perform nothing else then the preservation of the native heat, and the Natural Temperament of

the part, or the removal of those impediments that hinder Nature in her work; we are now in the next place to see, whether the Weapon-Salve can perform those things.

Where we instantly meet with this first difficulty, to wit, whether possibly the Medicament that is not anoynted upon the Wound it self, but upon the Weapon, or any thing else that is befmeared with Blood from the Wound, can yield any benefit, especially if the wounded person be absent, and many miles distant from the anoynted Weapon. And indeed to prove this, they use two Reasons, as we also told you formerly: the first is this, that there may be actions from occult and hidden qualities, and at a distance, (which they call Magnetick actions) because that by the spirit of the world the virtue of the Unguent may be conveyed unto the Wound, as we see it to be done by the Sympathy and Antipathy of many things.

But neither proveth the thing that it ought to prove. For first of all, albeio we grant that such Actions there are, and that those things that mutually Act, and are passive, do not alwaies corporeally touch one the other; yet nevertheless, that this is so in the Weapon-Salve, and whether, or no any virtue can be derived from the Weapon anoynted unto the Wound at so great a distance and interval of places, this is yet to be proved. For it doth not follow, there are such admirable actions of other things, and therefore also the Weapon-Salve hath such a virtue. And that this is not done, he shal easily perceive that will but consider those other Actions of this Nature, that are performed at a distance. Since that the operation followeth the being of a thing, it is therefore necessary that between the Agent and the Patient there should be a certain conjunction, and mutual Contact. But now, in regard that the things between which the Action is do not all of them touch one the other with their Bodies, there is a necessity that they should touch in some other manner. And this is twofold: for either the thing that is said to act at a distance, sendeth forth something from its own Body and substance, (which the Ancients called *Effluvi-um* or *Aporrhoeia*, and Physicians where they treat of Contagion, call it *Miasmos*; touching which see further in the fourth B. of Fevers, Chap. 4. and the 2. B. of our Institutions, Part 2. Chap. 12.) to wit, when there flow forth of the Body the smallest imaginable parts; and Atomes, and by the Medium of

Whether the  
Weapon Salve  
can Act at a  
distance?

Action at a  
distance two-  
fold:

the Air ( or some other body, ) are transferred unto another body, and affect it with that virtue which it hath in common with the whole entire body. But now as for such small bodies as these, they have no Regular motion at all, but according to the motion of the Air they move inordinately this way and that way, and by every blast they are variously dispersed; like as we may see in the smoak of Candles when they are extinguished, and of other things when they are first lighted and kindled. But other bodies there are that Acting at a distance do not indeed send forth from their own body any thing that may be transferred unto another body, but only they send forth a *species* as we may call it; and in this manner, by means of these sensible *species*, as light, sound, smell, and the like, even the distant bodies are affected. And very probable it is, that there are more of these like sensible species than what are perceived by our senses. And this is commonly sayd to be done by a virtue, or virtual contact. And yet nevertheless virtue doth always presuppose a substance from which the said virtue floweth. So the flame being extinguished, the illumination or light that comes from it that also ceaseth. And moreover secondly there is likewise a fit subject required, thorow which it may be propagated; which if there be not, the Action ceaseth. And so an opacous and thick body being interposed betwixt the light body and our sight, the Illumination ceaseth. Thirdly, this virtue is likewise diffused orbicularly, and at a certain distance; Naturalists term it the sphere of Activity; which in some things is greater, and in others less. The greatest of all is in light or lucid bodies, but a less in those bodies that yield a sound. But yet the greater the lucid and lightfom body is the greater also is its sphere of Activity: and hereupon it is, that the stars of all other bodies do scatter and, disperse their light from them furthest in distance and widest in breadth.

We are now therefore to make enquiry (in regard that it is of a certainty that the Weapon salve with which the Weapon is anointed, is in body absent and distant from the wounded party) whether the weapon-salve touch the Wounded body either of these two waies; for a third way there is none. Neither can this be done by Accident & some quality; since that an Accident doth not pass from one subject to another, neither diffuse itself at a distance, and unto any other body. Now I say that this is not done, neither indeed can be, either of these waies.

*The weapon-salve doth not Act by sending forth any small bodies.*

For first of all, those Atomes or Effluvious bodies that flow forth, having no certain motion of their own, but moving inordinately hither and thither, this way and that way, how can these possibly directly and in a straight line tend unto the wounded person? Neither is there any Cause, that we should here fly unto and plead the likeness of Substance. For although that those smallest bodies do at the length apply themselves unto others of their own kinds, (as we may plainly see in thunder and lightning) yet notwithstanding when they at first exhale out of the body they wander up and down inordinately, this way and that way. And much less may we have recourse unto the spirit of the World, by whose carrying and conveying whereof these smallest bodies may from the weapon anointed at length come unto the wounded person, and the wound it self. For those things are indeed spoken of the spirit of the world, but they are not proved; yea but rather they are opposed by reasons strong and weighty. And furthermore, since that this cure extends it self very far in length, and (as they will have us beleeve) at the distance of some miles; if this were done by the effusion of those small bodies, seeing there is so very little of the Unguent, and yet much less of that natural Balsam that sticketh unto the Weapon, that Unguent with the Balsam would easily fly abroad into the Air, and there vanish; and so the very foundation of the cure being taken away and gone, the cure it self must needs cease.

*The weapon-salve doth not Act by any species.*

But if they will say, that this Action is performed by the species, or Magnetick action, they ought first of all to prove that there are such species in this Unguent; (for indeed Nature hath given unto some simples and things natural, not compounded by art, a virtue of sending forth such like species as these we speak of) and then they must shew us what the nature of them is, and what their sphere of Activity. For it is no way credible, that the virtue of this Unguent should extend it self for twelve miles round about, and so orbicularly. As for what concerns the Loadstone, (from which they are wont to term these magnetick actions) the Loadstone doth indeed attract the Iron although it be at some distance from it; but if very far removed, and beyond the sphere of its Activity, it doth not attract; and the very same is likewise well known to be done in other such like occult and magnetick Actions. For the Loadstone, and other the like bodies, do put forth their virtues



trues in a straight and direct line, which yet nevertheless are not extended in infinitum (as we say) and they are oftentimes likewise intercepted by the interpoling of other things. So the Sun-beams by the coming between of an opacous body are excluded. Who then can believe, that from so small a pittance of the Unguent, and so little of the blood, there should break forth so many of these small bodies or species, thorow the chest in which the anoynted weapon is shut up, and that they should thence be carried so great a distance, (even twelve miles) that they should penetrate thorow Mountains and Walls, and tend directly unto the wounded person close shut up within his Chamber, or in bed, and that there they should pass throw those many double swathes wherein the wound is wrapped, and so insinuate themselves at length into the wound it self? The Loadstone is moved unto the Iron; but this unguent is not anoynted upon the Wound, but upon the Weapon. And the Loadstone indeed being but only moved toward the Iron, draweth it; but now in the right using of this unguent, what a company of Ceremonies and superstitious practises there are used we have shewn you before. And in other respects also there appeareth a very vast difference between the Loadstone and this Weapon salve. The Loadstone is a natural body and so hath its Natural Effect, which evermore worketh in one and the same manner. The Weapon salve is a Composition out of many things; and by some it is made one way, and by others after a different manner, and of other things, as before we have shewn you. And the Unguent ought also to effect many things, to wit, perform all those things that are Necessary for the curing of the wound, preserve the Wound free from pain, and likewise bring pain upon it if it be not rightly preserved, or if it chance to be defiled. For if it ought to perform all that that is otherwise the work of Nature in the curing of Wounds; there will be then altogether a necessity that it perform many things; to wit, that it concoct whatsoever is to be concocted, that it expel the Pus and excrements, and that it generate flesh. Yea moreover it ought to perform the office both of the Physician, and also of the Medicaments, which is indeed very various. For neither are all those bodies that are Wounded alike disposed; some of them being sound bodies, others Plethorick, and a third sort Cacoehymical; the parts likewise are various, as flesh, Nerves, Membranes; which require Medicaments of a different kind; the virtues of all which this unguent ought to sustain. And if a man shall at one and the same time

(as it very often happeneth) receive divers wounds in different parts of his body, and from different weapons; the question then will be, whether it be sufficient to anoynt one of the Weapons only, and whether or no the virtue thereof will be conveyed unto all these several wounds; or whether or no all the weapons are to be anoynted; and whether each particular unguent will do its own office, and this tend straight and directly unto that wound that was inflicted by this weapon; and that unguent likewise unto another wound made by that other weapon?

A reason should likewise be rendered why the unguent should not perform the same while it is in the box, which they say it performs when it is anoynted upon the weapon. For they have no ground to say that by the benefit of that ballam that is in the blood the virtue of the Medicament is carried and conveyed unto the wound. For if all that whole blood were resolved into Atomes, it would not be sufficient to fill up all that so great a space. Neither have they as yet proved, that the blood can send forth out of it self any such species. And if by the benefit of the blood the virtue of the Medicament may be carried unto the wound, why should it not then likewise carry to the wound the virtues of other things, into the which out of wounded persons the blood is oftentimes abundantly poured out, which yet we see that it doth not.

But now as for those things that they alledge in special touching the Secundines, and the first menstruous blood of Virgins, and as for their asserting that if this blood be not rightly handled, there is much hurt and damage brought unto those maydens, these things are to be imputed unto the superstition of these young Women. And if in woman kind the Secundines being cast forth into some unclean places bring damage unto these women from whom they came, why is not the like done in brut Creatures, whose Secundines or afterbirths being cast forth and buried in dung do oftentimes putrefy? And in what place soever you dig and bury these secundines, they yet notwithstanding rot and putrefy. And why also do not the Mole (or false conceptions) which women use to burn, bring any hurt and damage unto the Woman from whom it proceeded? And why should the first menstruous blood if it be burnt bring damage unto the virgin, and none of the rest?

These things being as we have said, and the case thus standing, there is no need of any further tedious dispute touching those virtues that this unguent is said to have in curing the Wound, seeing that it is hitherto sufficiently

sufficiently proved, that there cometh no virtue at all from this Unguent unto the Wound. And if this Unguent had indeed any virtue at all in it either of preserving and cherishing the temperament or the innate heat of the part (they commonly call it the Balsam) or of drying up the Excrements, it would better and more commodiously exercise and put forth this virtue, being anoynted upon the wounded part it self, then upon the Weapon. And besides all this, if (as some will have it) the virtue and strength of this Medicament consist in the Blood and fat of Man, why then do some of them likewise apply it unto the Wounds of other living Creatures, to wit, of Horses, &c. ? For how great is the Difference between a Man and a Horse ?

But that *Crollius* and some others (that I may not here altogether omit the mentioning of this also) derive the virtue of this Medicament from the Heaven, and therefore command the preparing of it in such a certain position of the Heavens : Neither will that at all patronize this Cause. For they have not as yet proved, that there is in the Heavens or any of the Stars any virtue at all to heal Wounds ; or that if there were any such virtue in these, that it doth so mingle it self with this Unguent, that as if it were in a manner bound and shut up, it may be carried up and down about with us, and drawn forth into use and Act when we please.

And so likewise as touching the manner of using this Medicament, this also hath no Foundation to uphold it, neither doth it want for superstition. For first of all, seeing that they place the whole Cause of the Cure in this, that the virtue of the Medicament is derived unto the Wound by the benefit of the natural Balsam that is in the Blood ; why then do they anoynt only the Weapon with the which the man was wounded, or some other Weapon, or a piece of Wood bloodied with the Blood of the Wound ; and why do they not as well anoynt his shirt, or the other Garments of the wounded party, or a Stone, or any thing else what ever it be upon which the Blood hath been spilt or poured out : and if not, there is then some implicite underhand compact with the Devil to be suspected. And moreover, why if the wound be made with the pricking of a sword do they anoynt the sword in the point thereof towards the hilt ; but if the wound be made by the Cut of a sword, then they anoynt it from the edge towards the back : and if it appear how far and deep the sword penetrated into the wound, so far they anoynt it, and no farther ; but if it doth not appear how far it pierced,

they then anoynt the sword all over : all which are no better then Superstitious Ceremonies, and of which no Reason can be rendered. For if the power and faculty of the Medicament be Natural, what doth this or that manner of using it in the anoynting make to the thing it self, and whether or no doth it add any new virtue and quality thereto ? If the virtues be Natural, there is no need of any such Ceremonies ; as it plainly appeareth in all Natural things whatsoever. The Load-stone draweth the Iron ; and the Iron being touched with the Load-stone is moved unto the North-pole, without any of the aforesaid Ceremonies. And furthermore, some there are that anoynt the Weapon once every day, others every Second, or Third day ; and some content themselves with once only anoynting. And some there are, who (that so they may not erre in the anoynting) wholly dip and plunge the Weapon (or Saw, low Wood, that now and then serves in stead thereof) into the Unguent kept in a long Box, or little Chest, until the Wound be perfectly healed ; but they altogether neglect the Weapon it self, that dip the Arms (or that they make use of in their stead) all over in the Unguent. But others there are that keep the anoynted Weapon in any temperate place what ever it be ; and others likewise shut it up in a little Chest. But all of them generally are exceeding Cautious in this, that the Weapon be never kept in any place that is over hot, or over cold, and that it be not polluted with filth and impurities : for if this should happen, the Cure will by this means be hindered, and a most grievous pain in the Wound procured unto the sick person : All which are merely frivolous and superstitious. For seeing that (as it is before sufficiently proved) there cannot possibly be any action of the Weapon-Salve upon the wound at a far distance, and interval of place from the Wound ; so likewise we say, that it cannot possibly excite any pain. And therefore we conclude, that if this at any time happen, it is then caused and procured by the help and assistance of some evil spirit. And most certain it is, that the Blood of wounded persons is not alwaies poured forth into clean places, but oftentimes into places very noysom and unclean ; and that in the Winter time it is frozen ; and that the Bloody Linen Clothes are washed with warm Water, and the wood be sprinkled with the Blood oftentimes burnt, and yet nevertheless the sick person doth not hereupon feel any pain, or suffer any damage whatsoever.

And furthermore we say, that they attribute unto this Unguent things altogether impossible,

possible, and those virtues all which are never to be found in any one Natural Medicament. For they affirm that by this Unguent may be Cured all wounds whatever, whether inflicted by downright cutting, or pricking, by a fal, or any thing cast at the party. But great is the diversity of Wounds according to the various Circumstances that attend them; and therefore there is not required one only Medicament, but divers Medicaments are required unto the Curing of them. A Wound inflicted by a sharp and keen Weapon is Cured without the generating of much Pus: but in that which is from a blunt Weapon, whatsoever is bruised must of necessity al of it convert into Pus. And there is also an exceeding great difference of the parts. In a fleshy part (especially, when the man is of a sound and healthy Constitution) the Wound is easily Cured; but much harder is that Wound to be Cured that is inflicted upon the Brain, Nerves, Tendons, and Ligaments, (especially the greater ones) such as are those in the Hams. They promise the Patient likewise that the Cure of the Wound shall be altogether without pain: which in all parts to perform is a thing altogether impossible. For certainly if a Nerve be prick't, there is no man that can make good his promise, that here in this no pain shall afflict the Party.

And that we may now conclude whatsoever may be further said in this Controversie; the Curing of the Wound that is ascribed unto this Weapon-Salve, (as hath been said) is for the most part to be attributed unto Nature, whose work alone it is to Cure not only light and trivial Wounds, but oftentimes also Wounds most grievous and full of danger. Which appeareth even from this, that there are so many several descriptions given us of this Unguent; and that there have been some, who instead of this compound Weapon-Salve have made use of Lard only, or Hogs fat, and yet notwithstanding the Wound have been Cured; which *Johannes Colerius* testifieth (as before we alleadged him) that he himself had seen; as we may find it in the before cited place of his *Oeconomicks*. But now, if upon the administering of this Medicament some most grievous Wound shall be healed, which may seem altogether to transcend the power of Nature, this cometh to pass by the power of the Devil himself, drawn thereunto by some compact either explicate or implicate. Neither is the suspicion hereof any waies to be lessened, or removed, by what is said by some, to wit, that all the simples that make up the Composition of this Medicament, Unguent, or (as it is commonly called,) Weapon-Salve, are

all of them altogether Natural; and that in the Composition hereof, or the anoynting therewith there are neither Characters, nor Conjurations, nor Charms and Inchantments made use of. For the Devil doth oftentimes hide and conceal the Compact that he makes not only under Characters and Consecrations, or a certain form of words, but likewise even under things Natural, if at his command (which is done indeed in the first and explicate Compact, wherein others that administer and apply the same things implicitly and inconsiderately may likewise involve themselves) things that are Natural be made use of for other purposes then what they were Created for by God; and oftentimes Diabolical and Magical Actions are concealed and obtruded under the veil of Magnetick Actions. And therefore, although it be granted, that by this Unguent the wounded person is healed (which yet nevertheless is, as we have said, wrought by the benefic of Nature) yet it is not impossible, but that the Devil, that he may destroy the Soul, by Gods permission in many things may help the Body after a certain manner: yet it is very Credible, in regard that he is the implacable enemy of Mankind, and evermore ready and provided to do them all manner of hurt and mischief, that he may seduce and draw men (as far as lieth in his power) from God the Creator, and Author of all good; and from the Means by him ordained, unto things superstitious, and unwarrantable practises.

## Chap. II. *Of Altering Medicaments, and Vulnery Potions.*

**V**VE told you before, that there are two sorts of Medicaments that are made use of in the Curing of Wounds, external, and internal. Touching the external we have hitherto spoken; we will therefore now in this Chapter handle the internal. Now those are of two Sorts; some only altering, and some in special called vulnerary. Altering Medicaments, are Coolers, Thickeners; and such as are but lightly (lest they might otherwise breed obstructions) Astringent: which are to this end administered, that they may hinder the Humors that they easily wax not hot, become fluxile, and receive a putridness. And such are made of *Succory*, *Endive*, *Sorrel*, *Plantane*, *Tormentil*, *Rosel*, *Purslane*, *Water Lilly*, *Borrage*, *Saunders*, *Juyce of Citron*, *Juyce of Pome-Granater*, *Harts-Horn*, *Margarites*, and *Coralls*: out of which there are made Decoctions, distilled Waters, Syriips, Electuaries, and Potions:

And



whether Vul-  
nerary potions  
are to be made  
use of.

And moreover there are made use of certain Medicaments, potions more especially, that are termed vulnerary. Touching which notwithstanding Authors differ amongst themselves. For some of them (among whom is *Baldwinus Russens*, in his *Medicinal Epistles*, *Epist.* 66.) do indeed admit of them in those wounded parts unto which these kinde of Potions do reach, as the Gullet, Stomack, and Intestines, and then they have in a manner the place of Topick Medicaments; but in the external parts they reject them, for these Causes. First, Because that in the writings of *Hippocrates* and the Ancient Physicians they finde no mention made of these vulnerary potions. Secondly, because that by Reason of the distance of the Situation, they will not beleieve, that these potions can possibly penetrate unto the extreame Limbs, or the Head; nor yet unto the greater and thicker Guts, unto which therefore when they are wounded Medicaments may more commodiously be injected by Clysters, then given to drink; yea they conceive that those Astringents, that for the most part are mingled therewith may hinder that those Medicaments may not penetrate unto the more deep and inward parts. Thirdly, Because that there is a great difference between the Medicaments out of which these potions are prepared; since that some of them are hot and opening, as *Betony*, *Speed-well*, *Mug-wort*, *Avens*, *Carduus Benedictus*, &c. as also Cold, and Astringent, as *great Comfrey*, *Winter green*, *Hors-Tail*, *Burnet*, *Tormentil*, &c. So that it doth not sufficiently appear of what faculty the Medicaments ought to be, out of which these potions are prepared, and what virtues these potions have in them. Fourthly, whenas yet notwithstanding they are most of them Astringent, they think that being administered they bring more hurt then good and benefit unto the Patient; in regard that they obstruct the Liver and the other more noble bowels.

But in very truth, it is not indeed to be denied, that among the more Ancient Physicians (to the best of my Remembrance) we scarcely meet with any mention made as touching these Medicaments: and yet among the Physicians of latter times very frequent and common hath been the use of them. And yet nevertheless those things that *Galen* hath in the 5. of his *Method*, *Chap.* 9. touching potions in Wounds of the Thorax, those things (I say) seem to come very neer unto these, and to suit and answer unto these potions. And the Author of the *B. de Dynamidin*, *Tit. de Plaga*) maketh mention of these

potions; who administred out of Wine *Mousse-Ear*, *Plantain*, *Strawberry Leaver*, *Avens*, *Pimpernel*, *Ground Ivy*, *Betony*, *Agri-mony*, And in his Title, touching the Curing of Wounds, he prescribeth *Mousse-Ear*, *Agri-mony*, *Ground Ivy*. And in the Antidotary of *Mesues*, about the end of the 11. Distinction, after the Emplastres, there is extant such a potion.

Take *Avens*, Root of *Mug-wort*, *Pimpernel*, *Camomile*, five leaved *Gross*, *Black French Horsehound*, *Violets*, *Hemp stalks*, the tender tops of the *Bramble bush*, of each one handfull; Madder, according to the weight of all the other. Let all these boyl in Wine unto the one half; and afterwards let them be strained; unto the straining add a third part of Honey; and then boyl them again, and strain them.

The truth is, *Christophorus Georgius* (in his Comment.) writeth that this Medicament is no where to be met with in Ancient writings, or Books; and *Johannes Manardus* (in his Comment upon this place) writeth that he knew not by what accident this mixture had crept into this place, and that the potion was added unto the Emplastres. And yet nevertheless, the same *Christoph. Georgius de Honestis* confesseth (in the same place) whether it be *Mesues* his potion, or any ones else, that it is to be found described in many other Authors: and *Johannes Manardus* (in the same place) writeth, that these kind of Potions are very useful both for new and old wounds; and that he himself had more then once made trial of them; and that with them alone he had cured the worst and most desperate Ulcers. And these have been likewise used by others, and those not only Empiricks, but also most learned, able, and skilful Physicians and Chirurgeons; *Guido* (part 2. of his little Chirurgery, *Chap.* 9. *John de Vigo*, *Lib.* 3. *Chap.* 10.) *Johannes Anglicus*, *Nicolaus Massa*, *Epist.* 38. *Johannes Tragan.* B. 2. of his Chirurgical Institutions. *Johannes Andreas a Cruce*, of Wounds, *Traict* 2. B. 4. *Chap.* 4. *Fallopins*, in his B. of Wounds, *Chap.* 24. *Petrus Andreas Matthiolus*, in his fourth B. upon *Dioscorides*, and *Chap.* 16. *Ambrose Parry* B. 18. *Chap.* 28. *Hieronymus Fabricius ab Aquapendente*, in B. 2. of his Chirurgery, *Chap.* 23. *Ludovicus Septalius*, in his 8. B. of Medicinal Animadvers. Num. 181. And others (a great many more of them) whom experience taught, that these potions were exceeding useful in the Curing of Wounds. And therefore, to oppose and thwart experience, and to reject, or neglect Medicaments approved of by long use and practise, it is a thing no way fit to be done. For as *Galen* writeth (in his 5. B. of the affected places, and 3. *Chap.*) It is better (saith he)

he) to seek out how things that are done are wrought and affected, then to deny that they may at all be done. Neither is this sufficient for the rejection of Medicaments, that there hath bin no mention made of them in the Books of the Ancients; for many most useful Medicaments have been found out by those of latter times, that the Ancients were altogether ignorant of. Neither are they administred for that end that Topicks are, or those potions of which Galen maketh mention, in his 4. B. of the Meth. of Curing, Chap. 7. And therefore albeit that they do not externally reach so far as the wounded parts, as other Topicks; yet nevertheless, they may through the Veins penetrate even unto the very Wounds themselves. Neither by Reason of their astringent virtue which certain of them have from those Medicaments is there any cause to fear that therefore they cannot penetrate unto the exterior Members; or that they are likely to breed obstructions in the Bowels. For this inconvenience may easily be Remedied and avoided by the admixture of other things that have in them rather a power of opening, then binding. Neither lastly, are the virtues of all Medicaments to be valued only from the first qualities, and such as arise from, and depend upon them; but from the properties that arise from the whole substance; which are suggested unto us only by experience. But now the virtues of these Medicaments, although they cannot easily be defined, but may be manifested by experience; yet notwithstanding in this all Authors agree among themselves, that these ought not to be made use of in the beginning, and when there is as yet no danger appearing by reason of the Wound, and that Topicks are sufficient for the full and perfect Cure; as likewise where there is present a fever and an Inflammation; which by the use of these (they being for the most part hot) may easily be augmented: but as for other Causes so especially for this, to wit, the virious Constitution of the part, Wounds oftentimes do not easily receive a Cure; and thereupon it is that they may happily and successfully be made use of, not only in Wounds, but likewise in Ulcers and Fistula's. For it is a thing that is very much Material, how the wounded part and the blood therein are disposed; and what things soever they are that hurt the Wound, they all of them are for the most part communicated unto the Wound by the fault of the Blood; as Tragauntius tells us in the 2. B. of his Chirurgical Institut. Chap. 12. And it being so, as we see, that some kind of meats are more fit and Convenient for wounded persons, and some again, offensive and hurtful: why may we not therefore give the

Patient to drink such Medicaments as cause that all things in the Blood and about the affected part may be rightly disposed, and in good order? Touching which, Ambrose Parry (in the place before alleadged) thus writeth: Nature being assisted (saith he) by such a potion, bath often seemed to me to work effects wonderful and Miraculous, in the recovery of bones rotten and impostumated, and the Consolidation of Ulcers. For these potions albeit that they do not by the Belly purge away the Noxious and offensive Humors; yet nevertheless they are very efficacious in the cleansing of Ulcers, and the preserving and freeing of them from all that filth of the Excrementitious Humors, the defecating and carrying away the dregs of the Blood, and the purging of the Wound from the thin Ichorous Excrements, and all impurity; in the agglutinating also of broken bones; and the restoring of the Nerves unto their pristine Union. And presently he addeth this further; by this admirable and laudable Medicament the flesh and any other substance that is lost and perished may readily be restored and made good again, and the part restored unto its former Union. And Pet. Andreas Matthiolus (in his 4. B. upon Dioscorides, Chap. 16.) saith thus: By such potions I have seen healed as well the Wounds of the Thorax as those of the Inuestines, which were thought to be mortal, and altogether incurable by any help and means whatsoever. And this these Medicaments do altogether and without fail perform, to wit, that they consume the excessive humidity of the blood that is wholly unfit for agglutination; that they supply a dug and fit matter for the generating of flesh; and Thirdly, that by their moderate astringition they prevent and hinder the afflux of humors unto the wounded part. And Guido of Gauliacum (Tr. 3. Doct. 1. Chap. 1.) writeth thus in the stile of his Age: In Ancient Ulcers (saith he) in case of any parts Fistulated and Cancerated, as also in Blood congealed in the interior parts, and in case of Sanies gotten together in the Breast and Intrinsic Glandules, and in Croakings of the Guts, I have sometimes used these potions. And out of him the very same hath Johannes Tragautius (in his 2. B. of Chirurgic. Institutione:) and Johannes Andrea a Cruce writeth very confidently, that in these cases he himself was wont to make use of these potions; and most of all in Wounds of a long continuance, when they have come to be Fistulated, and refractory against all other Remedies. And Ludovicus Septalini (in the place alleadged) writeth thus: When we once perceive (saith he) that great store of excrements are from day to day generated, either by reason of Errors committed in point of Diet, or by reason of the overgreat abounding of

naughty and vicious Humors in the whole Body, or else by reason of scurving amiss and faulty in the Wound; the Body being first evacuated, and the time of the Inflammation passed over, we thought good oftentimes to make use of some vulnerary potion for many daies together, until we saw that the matter was wholly consumed.

Now the simples out of which they are made and prepared, are divers, *Johannes Andreæ* a *Cruce* writeth that there are only four Herbs that may be extolled and commended for this use, to wit, *Ladies Mantle*, *Avens*, the Herb *Periwinkle*, and the Herb *Trinity*, which is a Species of *Trifoyl* or three Leaf Grass. But indeed there are many more Plants in use for the making of these potions;

**The Mater-**  
**ials of vul-**  
**nerary poti-**  
**ons.**

to wit; The greater and less Con-  
found, *Sanicle*, *Saracennical con-*  
found, *Agrimony*, *Winter-green*,  
*Speed-wel*, *Mug-wort*, *Plantane*,  
*Savine*, *Horse-Tail*, *Adders Tongue*  
*fiveleaved Grass* or *Cinquefoil*, wild *Tansy*,  
*Vervain*, the *Red Cabbage*, *Neep* or *Neppe*,  
(some call it *Cat Mint*) *Golden Rod*, the lesser  
*Centaury*, *St. Johns-wort*, *Tansy*, *Vipers*  
*Bugloss*, *Rupture wort*, *Water Germander*,  
*Straw-Berry Leaves*, the *Roots of Tormentil*,  
*Pimpernel*, both the *Aristolochies* or *Birth-*  
*worts*, white *Dittany*, *Valerian*, *Bistort*,  
*Gentian*, *Rubarb*, *Rhapontick*, the *Flowers*  
of *Lillies of the Vally*, of *St. Johns-wort*, and  
*Roses*, *Crabs Eyes*, *Sperma Ceti* (commonly  
called *Parmacitty*) the *Lentisk Wood*, *Mummy*,  
*Mace*, *Bole-Armenick*.

Of these there are made divers Compositi-  
ons, but more especially potions and pouders  
And yet nevertheless in the preparing of  
these there is in the general to be observed; to  
wit, that those Plants which are appropri-  
ated unto the wounded part or the parts nigh  
unto it (as for instance, in the Wounds of the  
Head, *Betony*, *Roser*; in the Wounds of the  
Breast, *Speedwell*; in the Wounds of the Li-  
ver, and about the Liver, *Agrimony*; in the  
Wounds of the Reins, or about the Reins,  
*Straw-berry leaves*) are to be made choice of.

### Potions.

Take *Red Mug-wort*, one ounce; *Leaves*  
of *Tree Ivy*, the Herb *Winter-green*, the  
greater and less *Sanicle*, *Ladies Mantle*,  
*Saracennical Confound*, of each one ounce;  
Daisies, half an ounce; let them  
be cut smal, and infused in half  
a pinte of the best Wine, and  
cleer running Water, one pinte  
and half; let them stand in the *Balneum* shut  
and close covered, by the space of three  
hours, in the heat; and then after this let  
them be taken forth, and stand all night: in  
the morning add, *Sugar* four ounces; Nut-

meg, *Crabs Eyes Mummy*, of each two drams;  
and make a potion. Or,

Take *Ladies Mantle*, *Sanicle*, *Saracennical*  
*Confound*, wild *Ivy*, red *Mug-wort*, of each  
one handful; pour in unto these four measures  
of the best Wine; boyl them in a close pot  
over a gentle Fire, until the fourth part be  
consumed and wasted away. Or,

Take *Winter-green* four handfuls, the  
*Leaves of ground Ivy* three handfuls, the  
*Roots of white Gentian* four ounces; when  
you have cut them smal, put to them of old  
stale Beer as much as will suffice; let them  
stand all night, and afterwards destil them. Or,

Take *Saracennical Confound*, (all of it,  
both *Root* and *Leaves*) one handful; boyl  
them in good Wine, until a third part be  
wasted away; and give the Patient Morning  
and Evening a draught of this to drink. Or,

Take the Herb *Tormentil*, *Straw-berry*  
*leaves*, *Sanicle*, *Matrisylva* or *Ladies Bed-*  
*straw*, and *Winter-green*, of each one hand-  
ful; boyl them in beer, and give it the Pati-  
ent to drink. Or,

Take Herb *Winter green* Herb *Periwinkle*,  
the Herb *Bugle*, *Mug-wort*, *Pimpernel*, and  
*Agrimony*, of each two handfuls; boyl them  
in Wine unto the one half; and give the  
wounded person a draught of this Morning  
and Evenings. Or,

Take the *Lentisk Wood*, and *Oake Mil-*  
*lctoe*, of each two ounces; the *Roots of Con-*  
*found*, *Aristolochy*, *Centraury*, *Valerian*,  
*Madder*, *Tormentil*, and *Bistort*, of each half  
an ounce; *Common Water Chalibeated*, (that  
is to say, wherein steel hath been often que-  
ched) lix quarts; mingle them, and make  
an Infusion according to Art for twenty four  
hours; and afterwards let them boyl in a  
double Vessel, until the one half be wasted;  
and when in the boyling it is come to the third  
part, then add of *Parsley Roots*, the tops of  
the *Bramble Bush*, *Hemp*, *Mouf-Ear*, Herb  
*Trinity* (a species of *Trifoyl* or three leaved  
Grass) Herb *Climer* or *Periwinkle*, *Horse-*  
*Tayl*, *Straw-berry leaves*, *Flowers of Val-*  
*ley Lillies*, of each half a handful; *Rhapon-*  
*tick*, two drams; *Cinnamom*, half an ounce;  
but in the end of the Decoction add of *Aro-*  
*matick Wine*, three pints; and then having  
pressed forth the liquor, and strained it, with  
*Sugar* make a sweet and pleasant drink. Or,

Take *Guajacum Wood* prepared four ounces;  
the *Rinds of the same Wood*, and *Sarsaparilla*,  
of each two ounces; *Citrine-Saunders*, and  
*Tormentil Root*, *Bistort Root*, *Valerian Root*,  
white *Dittany Root*, and *Confound Root*, of  
each half an ounce; *Common spring Water*, two  
Gallons; mingle them, and make an Infusion  
according to Art, for twenty four hours; after  
this let them boyl in a double Vessel, until  
th;



the consumption of the third part; and then add, of Horsetayl, Betony, Mouseare, Cretan Dittany, Wintergreen, Wild Tansey, topps of the Bramble bush, herb trinity, and Strawberry leaves, of each half a handfull; Cinnamon half an ounce; let them boyl together, until there remain three Quarts; and in the end of the boyling add of the best White Wine, three pints; and then making a strong expression of the liquor, and straining it, make thereof with bony or sugar a sweet and pleasant drink for the Patient. But if the Wounded person should have a fever hanging upon him you must then leave out the Wine in the aforesaid decoction.

The following Potion likewise of the Nobles of Berine is very much commended; by which al one (as it is commonly reported,) the most grievous wounds are oftentimes cured; of which mention is likewise made by Guilbelm. Fabricius, in his 4 Century, Observat. 84.

Take Wintergreen, Golden rod, Mugwort, Sanicle, Red Beets, of each as much as you think good: the Plants are to be gathered in the Month of August, then dried in the shade, and afterwards beaten into a powder; take equal parts of the powder and mingle them; then,

Take Of this powder one spoonfull; let it boyl in one measure of White Wine: give the wounded person a draught of this blood-warm; thrice a day; and so continue it until the consolidation of the Wound; Give the Patient (if he be weak) two spoonfulls hereof. Another Potion.

Take Clary, Wintergreen, Periwinkle, Sarracennical Consound, Ladies bedstraw, Sanicle, Speedwel, Ladies Mantle, tree Ivy, Mugwort, of each three handfulls; Album Gracum (or if you will, white Dogs-tird) pickt up in the month of March, two ounces and half; old beer a little tart and sourish, the proportion of one little earthen Cup; let them stand digesting for fourteen daies; and afterwards let them be distilled; and reserve it for use in glasses wel and close stopp'd: of this you are to give three spoonfulls at a time, thrice every day.

And for this use and purpose, there are likewise powders to be provided.

Take Nutmegs one ounce; Crabs Eyes one ounce and half; make a powder; and give half a dram, or a dram at one time with wine, or,

Take Red Corral three drams, Margarites, Spodium, of each six drams; Crabs eyes two ounces, Mingle and make a powder. Give unto the wounded person of this powder one dram at a time in Wine or Water.

And such like Electuaries may be provided likewise: As,

Electuaries.

Take Conserve of Red Roses, and Betony of each two ounces; Tormentil and Consound, of each one ounce; Mace two drams; Red corral one dram; Crabs Eyes prepared half a dram, and with the syrup of sorrel make an Electuary. or,

Take Juice of Plantane, Horstail Sanicle, Mouseare, Speedwel, of each two ounces; the greater Consound roots roasted under the embers and passed thorow a hayr sieve one ounce; white Sugar one pound; boyl them to the Consistence of an Electuary; and in the end ad Conserve of Roses one ounce; Tormentil half an ounce, and mingle them.

And yet nevertheless, we are not so to trust and confide in those potions, as to neglect al other Topical Medicaments. For if we should thus do, the Wounded person may possibly fall into some great danger and hazard; of which we have a very remarkable history in Guilbelm. Fabricius his 4 Cent. Observ. 83.

## Chap. 12. Of the Dyet of Wounded persons.

And thus much may suffice to have been spoken touching the Chirurgial part, and the Medicaments Necessary in general for the curing of Wounds. It remaineth now that we speak some what of the Dyet that is to be observed by wounded persons.

Let the Air be temperate, or a little inclined to Warmth; touching which Celsus (in his fifth Book. Chap. 26.) thus; the Place (saith he) in which the wounded person shall lie, it ought to be somewhat warm. But a cold Air is greatly hurtful and an enemy unto all Wounds. And although that a hot Air be convenient enough for the wound; yet in regard that it heateth the body, moveth much the humors, and rendereth them fit and apt for motion, and so may easily give an occasion for fluxions, which are otherwise too apt to happen in Wounds, therefore it is not fit and allowable for wounded persons: touching which Celsus thus, in his fifth Book, and Chap. 26. The most opportune time (saith he) for the cure is the spring; or at least, that time that is neither fervently hot, neither yet over cold. For the truth is that both overmuch heat and too much cold, they do both of them infest and offend Wounds. But now if such an Air may not be had that is naturally such, it is to be made such by the help of art. Let the Air be likewise pure; and that which is stinking, or any ways impure is carefully to be avoyded.

*The food of  
the Patient.*

And as for the meat and drink of the Patient, (since that from the blood both the flesh and whatsoever else is Necessary for the agglutination of the wound is generated) they ought to be such from which good and pure blood may be bred; and such as may not afford the least occasion and matter for many excrements, and dangerous Symptoms. But meats of an ill juice must heedfully be eschewed, such as Garlick, Onions, Swines flesh, Pease; and the Patient must altogether abstain from meats that are hot, sharp, tart and biting, and of an ill juice; and he may only feed upon those meats that yield a good juice, and are of easy concoction. And let the food he takes be such for the quantity thereof that it may be concocted by Nature and such as may supply a moderate quantity of blood. For if too great abundance of blood be generated, it supplyeth matter fit for fluxion, inflammation, and other symptoms. And indeed his food that he taketh ought to be in such a quantity, that there may flow unto the wounded part too much blood as was wont to flow thither while the part was sound and without any distemper; seeing that the wounded part if it be rendered weak and infirm is not able to concoct and assimilate so great a quantity of blood as it did before; whereupon there will be generated either an inflammation, or great store of excrements, and so the wound will be made overmoyst. Let his meats likewise in the general be so ordered, that they may restrain the flux of humors, rather than excite it; & they ought to be altogether such, that if there be any thing amiss in the blood, and humors, it may rather correct then further augment the same. And if any evil accident shall befall the Wound, all indeavour ought to be used, that for the food may oppose and withstand the same. And yet nevertheless it is not one and the same kind of dyet that is fit and proper in all wounds. For if the wound be in a fleshy part, and that there be no danger of an inflammation, then a more plentiful dyet may be allowed: but if the wound be in the Nervous parts, and that there be danger at hand of an inflammation, then a more spare diet is to be prescribed, that so there may flow unto the wounded part the less store of blood, and the matter of the inflammation may be withdrawn and kept back. And indeed, by how much the danger in the wound is the greater, by so much the more spare ought his diet to be: but so soon as the danger of the wound is diminished, then his diet may be by degrees augmented, so that he may feed somewhat more fully, but yet still with a due moderation.

And therefore, albeit that Hippocrates (in his B. of Affects) saith, that Wounded persons ought to be pinched and afflicted with hunger; this is not simply so to be taken; but that we are alwayes to heed the danger of the wound, and especially of the inflammation conjoynd therewith; and according as this danger shall be greater or less, so the diet prescribed may be more full, or ought to be more sparing, as we may see out of the same Hippocrates, in his Book of Fractures, comment 1. Text. 44. and Comment. 3. Text. 12. in also out of Galen, in his Commentary upon those Texts of Hippocrates. But yet notwithstanding there is some consideration and respect to be had unto the Age, time of the year, Region, Custome, and Temperature, according to that 17. Aphorism of the first Section.

As touching the Patients drink; His Drink. in our Regions Beer may fitly and conveniently enough be drunk; I mean, that drink that is made either of Barly or of Wheat: and this is to be made sometimes weaker, and sometimes stronger, according to the state and condition of the wounded party, and the wound itself. Wine is not allowable in those wounds that are dangerous, and where there is present, or the danger of an Inflammation threatened and neer at hand; in regard that it may (by reason of its heat and thinness) be a vehicle or means to convey the humors unto the part affected. And therefore Hippocrates (in his Book of Ulcers, text 1.) writeth in this manner. *A small and moderate quantity of Meat, and the drinking of water, is mostly fit and requisite in all Wounds whatsoever; but yet rather in those that are new and fresh then in those that are old and of a long standing; and then especially when in the wound there is present an Inflammation, or if there shall be any feared; or when there is any danger lest that any thing may be vitiated; or when the wounds of a joynt are attempted by an inflammation; or when there is any fear of a convulsion at hand; and lastly, when the Belly hath received a Wound.* And therefore for those that have been long accustomed to drink water, (and where there is no great plenty of beer) either simple and pure water may be administered unto the patient; or else a Medicate water, destilled out of the juice of Pomogrates, Coriander seed, Citron rinds, or Barley water, or the water destilled out of the whole Citron. When the danger of the inflammation is past, then that wine that is thin and weak may be allowed the patient now and then. In wounds that are more grievous and full of danger, Medicate drinks may be provided and made of vulnerary herbs.

As

*Motion, and rest, which of them is best for those that are wounded.*

As for what Concerns the motion and rest of the body ; Rest is most convenient for wounded persons ; but more especially for the wounded part. For motion moveth and scattereth the humors, and rendereth them apt to flow ; and the moving of the wounded Member excireth a pain in it : and yet nevertheless, for the Patient to walk easily and gently ( his leggs being sound, & unhurt ) it will be no way amiss, but very good for him so to do : touching which *Celsus* ( in his fifth Book. and Chap. 26. ) thus gives us his opinion. *The best Medicament likewise ( saith he ) is Rest and quietness : and to Move and walk ( unless for those that are sound, and in health ) is not so fit and convenient : but yet nevertheless, it is least dangerous in those that are wounded in their head, or Arms ; but more unto such as are wounded in their inferior parts. But motion or walking is then least of all convenient, when the wound is either in the Thigh, or the Leg, or the Foot.*

*Affairs of the mind have they are to be avoided*

The Commotions likewise, and all perturbations of the mind are carefully to be avoided ; and more especially, wrath and Anger. And therefore those persons that may be an occasion of incensing and provoking to anger the sick person, are not to be permitted to come where he is ; nor so much as any mention to be made of them in his hearing. But the Patient ought rather to be moved and stirred up unto a moderate and sitting mirth and cherefulness, and all possible tranquillity and calmness of Mind. And of all other things that are prejudicial unto the Patient at this time, the use of *Venus* and the company of women is the most hurtful. Immoderate and overlong warchings are also very offensive ; in regard that they inflame, and cause a commotion in the humors. The sick persons belly must be kept open and soluble ; and if it chance at any time to be stoppt and shut up, it is then again to be opened and loosened with mild and gentle Clysters.

### Chap. 13. Of keeping the flux of humors from the Wounded part.

And thus much touching the general cure of Wounds ; which yet notwithstanding is sometimes to be varied according to the variety of the subjects, the Nature of the wounded part, and the condition of the diseases, and the symptoms that flow thereupon ; and of this we shall now speak.

And first of all indeed, it oftentimes hap-

peneth, that the body that is wounded may not be exactly and perfectly sound ; but that it may be either Plethorical or cacochymical ; so that there may be great cause to fear, lest that either great abundance of blood or the vicious humors that have been long treasuring up in the body may by occasion of the wound rush unto the affected part, and there excite various evils. And therefore we are to use our utmost endeavour to hinder and prevent the afflux of the humors unto the wounded part. Now this flux is especially prevented, if care be taken to hinder all those causes that may excite the said flux : and moreover all those things that may overmuch and praternaturally heat the wounded part, excite a pain therein, or render the same lost, loose ( and so consequently the more apt to receive the flux ) or overheat the humors, disperse them, and so render them the more fit for motion, are wholly to be removed, and taken quite away. And such a care and orderly course there ought also to be taken in point of dyet ; that it may not in any wise generate either too great abundance of blood, or bad and corrupt humors.

And furthermore, we are likewise to succour and help the weak and infirm part by those things that corroborate and strengthen it ; the pain ( if there shall be any ) is to be mitigated ; if there be present any heat, it is to be altered ; and at length the overgreat abundance of the blood is to be lessened, and the vicious humors to be evacuated : and this may fitly be done either by vene-section ; or else by purgation.

And therefore, if blood abound in the body, so that there be cause to fear the afflux thereof unto the wound ; it is in this case ( unless it hath already before much flown forth ) very fit to open a vein, and let forth a due quantity thereof ; Touching which *Celsus* ( in his fifth Book. and 16. Chap. ) saith thus ; *The Physitian ought to take forth some of the blood, thereby to cause a drynesse ;* And presently he adds ; *let the blood therefore flow forth more abundantly, that so there may be the more abundant drynesse ; but if it flow not forth sufficiently, let the vein be opened as much as may besif it be so that the patient hath strength enough to bear this loss of blood.* And this is chiefly to be done in great wounds, in which there is cause to fear an Afflux of the blood, by reason of the pain of the Wounded part ; and here in this case blood is likewise to be drawn forth, albeit that it doth not overgreatly abound in the body : whereupon *Hippocrates* ( in his Book of the Joynts ) in the bruising and wounding of a Rib, prescribeth



beth the taking forth of blood out of the Arm; where *Galen* in his *Comment* upon the place, addeth; *Although (saith he) there be no extraordinary store of blood abounding in the body, yet in those kind of blows and bruises we must have recourse unto venesection, and letting out a due quantity of blood.* And in his second Book of the composition of Medicaments according to the places he commendeth (in the first and chiefest place) venesection, for all pains of the head proceeding from a blow.

But now that this venesection may perform the whol work, and that it may cause not only evacuation, but likewise revulsion; the vein is therefore to be opened a good distance from the part affected, and on the contrary side, as else where we have told you, touching revulsion. Now this is to be done with all speed possibly, even the very first day of the wound and indeed before there be any medicament administered, that so the afflux of the blood unto the wounded part may be prevented.

As for the quantity of the blood to be let forth, it ought to be according to the store that is in the body; and according likewise to the strength of the Patient, and his ability to bear it. And therefore if there flowed forth much blood before, then venesection is to be omitted. But if there flowed forth little or no blood before, then you may now let forth a due proportion thereof; but alwaies according to the strength of the Patient and no otherwise: which you may best of all know by the Age of the wounded person, the habit of his body, the time of the year, and other Circumstances; touching which we have already spoken in its proper place.

But now, if vicious humors abound in the body, then there will be need of purging. For it being so that the Wound is so much the more successfully and more speedily cured, by how much the more sound the part is, and of a good constitution; and that the ill constitution of the wounded part doth much hinder the cure: we are therefore by all means possible to do our indeavor, that so the vicious humors may not flow unto the part affected.

And thereupon seeing that by occasion of the Wound it may very easily come to pass that they may flow unto the part affected: if they be found in the body, they are forthwith to be evacuated. And this is to be done in great wounds and where we have cause to fear lest that by reason of pain the depraved humors should rush unto the wounded part; as also in those wounds where there is any kind of cutting or dilating to be used, and where any bones is to be made bare of its

flesh; and in a word, in all wounds whatsoever wherein the pain is more vehement then ordinary. But smal Wounds, and such likewise as are free from pain may be cured even without any purging: but yet notwithstanding if the belly be bound, it is then to be opened and loosened with a Clyster.

There are some indeed that are utterly against purgations in any wounds whatsoever, as fearing lest that the humors being much stirred and disturbed

by the sayd purgations should flow so much the more unto the wounded part. But *Hippocrates* admitteth of them; as we may see in his fourth Book of *affections*, touching *Fractures*, Text 48. *Comment.* 3. and *Galen* in the fourth Book of his *Method of curing*, Chapt. 4. and 6. And indeed reason itself persuadeth hereunto. For if hot, thin, and cholerick humors abound in the body, they render the blood very apt for motion; and then by means of pain and want of rest they easily become hot and are inflamed, and so afford an occasion for a fever.

But now, albeit that all the vicious humors abounding in the body, are to be evacuated; yet notwithstanding (as we have sayd) more especially the hot, Cholerick, and wheyish humors are to be evacuated; which are more apt for motion and flowing; and such as make much for the generating of inflammations and Erysipelases, and such as do very easily excite feavers. Even at the very first beginning a purgation is to be appointed, to wit, before ever there be any afflux excited, and that any fever shall happen. But if there hath already happened any fever, purgation cannot then so conveniently and safely (but indeed with some kind of danger) be instituted and appointed.

And therefore to purge (in Wounds) there are most fitly and safely to be administered, *Manna*, *Syrup of Roses Solutive*, *Rhubarb*, the *Leaves of Sene*: and of compositions, *Tryphera Persica Elect.* de *Psyllio*, *Elect.* of *Roses of Mesues*. But we must abstain from the hottest purging medicaments; lest that there should thereby be excited an afflux of humors, that might dispose the wounded part unto an inflammation. But in what manner the purgation is rightly to be ordered, we have elsewhere already shewn you.

CHAP.

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Chap. 14. *Of the Wounds of the Veins and Arteries; and of the stopping the Hemorrhage in Wounds.*

**A**S touching the wounded parts themselves, oftentimes by reason of them there is something that is peculiar to be done in the Curing of wounds. How and after what manner the Cure of the wounds of private parts is to be rightly ordered, we have already told you in those places which we shall afterward alleadg. In the general, the wounds of the Veins, Arteries, Nerves and Nervous parts, do require a peculiar and proper kind of Cure.

And First of all, indeed, the Wounds of the Veins and the greater Arteries have this peculiar unto themselves, to wit, that there is alwaies some notable Hemorrhage to accompany them; which oftentimes causeth Faintings and Swoondings, and other dangerous Symptoms. But now the Blood floweth either out of the Veins, or out of the Arteries; and of these, sometimes indeed out of the greater, and sometimes out of the lesser; and either out of one alone, or else out of many. And although that the wound inflicted upon the Vessel be the prime and principal Cause of the Hemorrhage; yet it happeneth (and that very often also) that the blood may indeed now and then be stopt for a while, and yet it may afterwards suddenly break forth again; and this more especially chanceth upon the Commotion of the minde and provocation to anger. And so likewise the presence of the Patients Adversary, that gave him the wound, maketh greatly for the causing of a new and fresh Hemorrhage in the Wound: for which very Cause it is sometimes found by experience, that the Blood that was before stanch'd and stopt, begins again to flow forth afresh. And I my self remember, that one Brother having wounded another, and while the Wound was binding up the Brother that gave the Wound coming in to visit the other, (albeit that they were now reconciled) the Blood suddenly brake forth afresh; and this without doubt from the fiercer commotion of the minde; for upon his departure, and being forbidden to give any more visits, the Blood again stanch'd.

*Signs Diagnostick.*

But now, seeing that the Blood floweth either out of the Veins, or else out of the Arteries; that which floweth forth of the

Veins is more thick, more black and dark, and less hot; and it floweth forth without any great violence and rushing, and with an equal pulse, and doth far less deject the Spirits, (all things else being answerable) then that which cometh forth of the Arteries. But now that that cometh out of the Arteries may rather be said to leap forth with violence, then to flow; and in the pouring out it is more hot and fervent, more thin, more yellow, and more frothy; and it is evermore accompanied with some notable change and alteration in the Pulse, together with a weakness and dejection of the Patients strength. If it be one of the greater Vessels that is opened, then the Blood floweth forth in the greater abundance, and with so much the greater violence; but with far less, if it be one of the less Vessels that is opened, and wounded. But now, what Vein or Artery it is that is wounded, and whether only one or more of them be wounded, this must be known from those that are expert in Anatomy.

*Prognosticks.*

1. An overgreat Hemorrhage in Wounds is very dangerous: for the Blood is the Treasure of the Life; and when the vital spirits are called forth, it causeth a weakness of the Pulse, (it being so small that it can hardly be discern'd) as also a frequency and inequality thereof, and sometimes an intermission therein, a fainting and swoonding, a Syncope, an extream Coldness and Chiliness of the outward parts, and inordinate sweats, a Convulsion, sighings and sobbings, Deliries, and at length death it self. And hence it is that Hippocrates (in the 5. Sect. of his *Apborism. Apbor. 3.*) saith, *that a Convulsion or Sighing happening upon an abundant flux of the Blood is alwaies very evil and dangerous.* And in the 7. Sect. *Apborism. 9.* that a Deliry, or a Convulsion also happening from the abundant flowing forth of the Blood is evil and full of danger. And indeed it is so much the more dangerous, if a Convulsion be joyned with a Deliry, and that the Deliry happen not alone without the Convulsion.

2. And this is more especially caused by the effusion of the Arterial Blood, in regard that with it there is very much of the heat flowing in, as also the vital Spirits that are most chiefly Necessary for the preservation of the life, poured forth and dissipated.

3. And moreover also, for this reason the Wounds of the Arteries are more dangerous then the Wounds of the Veins, because that they are more difficultly Cured and Consolidated, by reason of their hardness, their perpetual motion, and the violent rushing forth of the Arterial Blood.

4. And

4. And those Wounds of the Arteries are yet likewise far more dangerous (and bring a long with them a greater Hæmorrhage, and such as is more difficult to Cure) that are inflicted according to the length of the Artery, or transversely, or obliquely, then those in which the whole Artery is cut assunder, as experience it self testifyeth; so that indeed, (and as the Physicians are wont to perswade) if the Hæmorrhage cannot otherwise be stoppt and stanch'd, in regard that the whole Artery is not cut quite through, it is then wholly to be cut assunder in a transverse manner. For if that the Artery be thus transversely cut in twain, it will again be contracted, and its orifices will again close and shut; and thereupon they will the more easily meet and grow together again, and the sooner be covered and shut up by the circumjacent flesh lying round about it; neither will the Wound so gape and stand so wide, while the Artery is dilated. But if that the Artery be Cut long waies, or obliquely, (or if it be wholly cut assunder any otherwise then transversely) since that it is moved with the continual motion of the Dilatation and Contraction, by this motion, and especially the distention, the Wound is more dilated, and in every Diastole it gapeth; whereupon the Blood is poured, and leapeth forth with violence and rushing.

#### *The Cure.*

As in every over great Hæmorrhage, so likewise in this that proceedeth from a wound, we meet with a twofold indication; the one, that which the wounded Vessels themselves suggest unto us, which requireth a Union and Glutination. The other that which the Hæmorrhage suggesteth; which if it be excessive and overgreat (so that it dejecteth the strength and powers of the Body) requireth that it be stanch'd, even before ever that the Vessels be shut up, and united. For whereas unto the Union of the Vessels there is some space of times required, (so that the Patient may in the mean while run a great hazard of his Life) the Blood is therefore immediately to be stanch'd.

That the Flux of the Blood therefore may be stoppt (although that the Wound of the Vessel be not as yet grown close together) all those things are to be performed which may hinder and inhibit the motion thereof. Now the Flux of Blood is impeded, if with convenient Remedies, and the binding up, the orifice of the wound be closed and shut up. In which manner if the Blood cannot be restrained, and that it also break through the Wound closed and shut up in any manner whatsoever, and all by reason of the impetuous violence of the Blood, then all those

things that do any waies help forward the violent motion of the Blood are to be removed, such as are, the overgreat abundance of the Blood stirring up and continually provoking the expulsive faculty; Anger, drinking of Wine, hot and thin Humors (as it were) continually boyling up, and over violent motions of the Body: as likewise of an Artery, if it be not wholly cut in sunder, the motion thereof, the declining and downward Situation of the member, and the like; and hitherto also may be referred the pain and heat in the part, which attracteth the Blood; and in this case that that violently and impetuously rusheth unto the wounded part is to be turned another way.

And first of all therefore, that the orifice of the Wound may be closed and shut up, we ought to use the utmost of our endeavour that this may be done. Now this is to be effected two waies; either by the Joyning together of the Lips of the wounded Vessels; or by the stopping of the orifice of the Wound. The Lips of the Wound may be joyned together, either by pressing together with the Fingers the orifice of the Wound, so long until the Blood be clotted, so that the thick and clotted Blood may it self obstruct and stop the orifice of the Vessel, that so the Mouth and Lips of the Vessel may touch and close together; or else the orifices are to be drawn close together by Swathes. But now, it is very rare that we may keep our Finger upon the orifice of the Wound until the Blood be clotted, so as to stop and obstruct the said orifice: neither hath this any place in the wounded Arteries, since that the Arterial blood, by reason of its thinness and heat, and the motion of the Artery, doth not easily (if at all) Clod in the orifice of the wound. Neither also may the Veins (if they lie deep) be easily drawn and kept close together by Swathes, neither yet may their orifices be pressed together with the Fingers. And therefore the safest Course is, that we do the best we can that so the orifice of the Vessel pouring forth blood may be stoppt. And this that it may be done artificially, let the orifice of the Wound be shut up and closed with the Finger, as much as possibly it may be done; but if it be so that the orifice it self of the Vessel cannot be reached unto by the Fingers, then that branch of the Vein that poureth forth the Blood there in that place whereby it tendeth to the Wound, is first of all (in the place neereft unto the Wound) to be pressed very hard together with the finger; and the Wound to be cleansed from all humidity; and then after this there is immediately a Medicament that will stop and stanch the Blood to be imposed. Which that it may be

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berightly and duly performed, the wound is not only to be loaden and rashly oppress'd (a thing wherein I have seen many Chirurgeons greatly to offend) with too many astringent Medicaments; but we ought to use the best of our endeavor, that the very orifice of the wound be instantly (and that very close and strictly) shut up. For unless this be done, albeit there be never so many of these kind of Medicaments impos'd; yet nevertheless if the orifice of the vessel be not close shut up, and obstructed, the blood will by it break forth, and so make void all the labor and pains the Chirurgeons have been at, and all the former provition (be it never so great) that they have made. Now for the stopping and stanching of the blood in this manner, there is hardly any thing to be named that wil more conveniently do it (as daily experience testifieth,) then that kind of Mushrom dryed (they commonly call it, *Crepitus Lupi*, or *Woolfs fart*) that usually groweth, and is to be found up and down in Vineyards. For it being of a nature most dry, as it will no way admit of the flowing forth of the blood (which those Medicaments do that are naturally moyst, and therefore they are but little or nothing useful for the stanching of the blood) so it will likewise cause that it sublist and stick fast in the vessel. But now this is most especially useful and beneficial, if it be first with a thread tyed together, and a weight layed thereon, or else pressed down and kept close together with a press wrung down hard upon it. For so, when it comes afterward to be impos'd upon the wound, it again dilateth it self, and so stoppeth up the orifice of the wound.

What Medicaments they are that stanch the blood.

But if it be so that you are not minded to confide in this one only remedy, then those powders that are known to be Astringent ought first to be strewed and sprinkled upon the wound. Galen above all other Medicaments (for the stanching of the blood) commendeth this that followeth: and in the fifth book of his Method, and *Chapt. 4.* he writeth that it is absolutely the best of all that he knew, and that he should much wonder, if it should be any ones chance to find out a better. It is as followeth;

Take *Fran'incense* one part, *Aloes* one part and half, Make a powder, and of this powder mingle a sufficient quantity with the white of an *Egge*, to the consistence of bony. Make up this mixture in those soft hayrs (or flux) of a hare; and so lay it upon the vessel, and the whol wound. And afterwards in a fit and convenient manner bind up the wound with a

swath; and then at length open and unbind it again on the third day. While this Medicament yet sticketh unto the wound, put yet another upon it; but if the former liniment begin of its own accord to fall off; then with the finger gently pressing down the root of the vessel (to wit) that nothing may flow forth of it, take away that with a careful hand, and put on the other. For so long as the Medicament shall be softened by the blood, the fluxion cannot be said to be well and sufficiently stop't. See Galen in the place before alleadged. There are nevertheless other powders that are likewise very useful. As.

Take *Bolearmenick*, *Dragons blood*, *Fran'incense*, *Aloes Succotrine*, of each alike, equal parts, and make a powder.

*Guilhelm. Fabricius* commendeth this following, as having often made use of it with very good success.

Take of the finest wheaten meal three ounces; *Dragons blood* and *Fran'incense*, of each half an ounce; *Oriental Bole*, and sealed earth of each two drams; *Target* six drams; water frogs prepared one ounce; Moss of a mans skull half an ounce; the soft flux of the hare cut very smal, one dram; the powder of the whites of Eggs carefully dryed in the Sun; the froth of the Sea dried likewise in the Sun, a new sponge tosted and torrefyed at the fire, of each half an ounce; Mingle them, and make a very smal and fine powder. or,

Take Moss of the wild sloe tree, the root of the nettle, and of the herb *Dragon*, of each half an ounce; Make a powder, and strew it upon the wound, or,

Take *Vitriol* powdered, as much as wil suffice; put it into a little linen cloth, and lay it upon the wound. or,

Take *Aloes*, *Frankincense*, the finest wheaten flower, *Spiders cobwebs*, *Bolearmenick*, the soft flux of a hare, of each one dram, make a powder. Or,

Take A dead Nettle, and having beaten it into a very fine powder strew it upon the wound.

Neither are we to desist from the use of those Medicaments, until the flesh that is bred is so produced about the vessel, that it shut up the orifice thereof. For unless this be done, there wil yet be alwaies great cause to fear an hemorrhage.

*Cesar Magatus* (in his first Book and 61. *Chapt.*) writeth that this water following, (being wel mingled together with the whites of Eggs thoroughly beaten) doth perform wonderful effects.

Take Juice of *Plantane*, of the soverunripe Grape, of *Quincas*, of sharp and tart *Pomgranates*, vinegar made of black wine, of each one pound; the Juice that is newly pressed forth of

*Asses dung* one pound; the whites of thirty Eggs wel beaten together. The herb *Horsfall*, *Strawberry leaver*, *Moufear*, *Adders tongue*, the herb *Trinity*, winter green, the herb *Pere-winkle*, *Wild Tansey*, *Bears ear*, the leaves of all these new and fresh gathered, one handfull; the new and fresh Roots of the greater consound one pound; the greater *Centaury* half a pound; *Pomegranate Rinds* and flowers, unripe *Galls* of the Oak, *Gum Arabick*, *Tragacanth*, *Sarcocol*, *White Frankincense*, of each half an ounce; Roots of *Tormentil*, *Bistort*, *Bolearmenick*, *Sealed earth*, *Dragons blood*, *Earth of Samus*, of each of these three drams; bruise what is to be bruised, and powder those things that are to be powdered, and so mingle them: and after a three days maceration, in a double vessel let there be a water drawn forth according to Art. But I doubt much whether or no this destilled water will have in it any considerable Astringent virtue; in regard that that part of simple Medicaments in which the astringent power doth chiefly lie can hardly ascend thorow the Alembick.

More efficacious is that water that is destilled from Alum, after the manner following.

The Alum water.

Take of the best *Alume* as much as you please; powder it and put it into a *Bulls* or *Oxe bladder* and so put it into a kettle of hot water; that the *Alume* may be dissolved. Destil this water by an Alembick; and continue the work so long, even until the feces reside in the bottom. And these are again a new to be dissolved in the *Oxe bladder*, until the whole substance of the *Alume* shal by destillation be converted into water.

Whether in case of an Hemorrhage we may use Causticks.

But if the blood shal not be stanch'd by these Remedies; there are some that use Causticks, that bring a crustines over the Wound, and so by the benefit of it shut the Orifice of the vessel. But the truth is, this way is not safe enough, but full of peril. For seeing that so much of the Particle as is burnt into a crust, so much there falleth away of the Natural flesh from the part; when the crust falleth off the orifice of the vessel is again left naked, and bare of flesh; so that there is oftentimes a new hemorrhage excited, and not easily stanch'd. Of these we may most safely make use of such of them as being burnt retain still a caustick virtue, and being not burnt have in them a notable astringent power, but very little of the Caustick faculty, whereby they burn: and such a like medica-

The virtue of vitriol in an Hemorrhage.

ment is crude vitriol; which therefore some (crude as it is) do beat into a powder, and so sprinkle it upon Wounds, for the stopping of the hemorrhage. But others there are that dissolve it in water, and then they moisten linen clothes, & lay them upon the wound. And moreover *Calcanth* (which some call *stoomakers black*) either pulverized, or else dissolved in a convenient liquor is of singular use in wounds, where the orifice of the vessel cannot be closed either by compression, or by that mushroom before mentioned (which they commonly call *Crepitus Lupi*) or even by burning, be there never so great need thereof. But this *Calcanth* (especially if dissolved in liquor) penetrateth even thorow the very vessel that is hurt. But here notwithstanding we are to beware that the nerves (if any be neer) be not hurt. And therefore into such like deep Wounds (if there be any Nerves in the wounded part) other Medicaments that have a power to stanch blood are rather to be cast in by clysters that have little ears affixed to them, or some other fit and convenient instruments.

In the interim notwithstanding, it will be likewise very requisite to administer certain general or (as they call them) universal, remedies that make for the stopping and stanching of the blood, to wit, drawers back, intercepters; and certain internal Medicaments that stay the blood.

Venesction.

Those things that draw back, are first, venesection, appointed in the contrary place; which may then only be put in practise when the hemorrhage is not great, and the strength of the Patient but little impayred. But yet nevertheless, that so the Patients strength may be the better preserved, and the revulsion performed with the more expedition, the blood is not at once to be evacuated, but at several times.

But if the Patients strength wil not bear venesection in this case, Cupping-glasses both dry, and scarified (as need shal require) are to be applyed in the remote and opposite places.

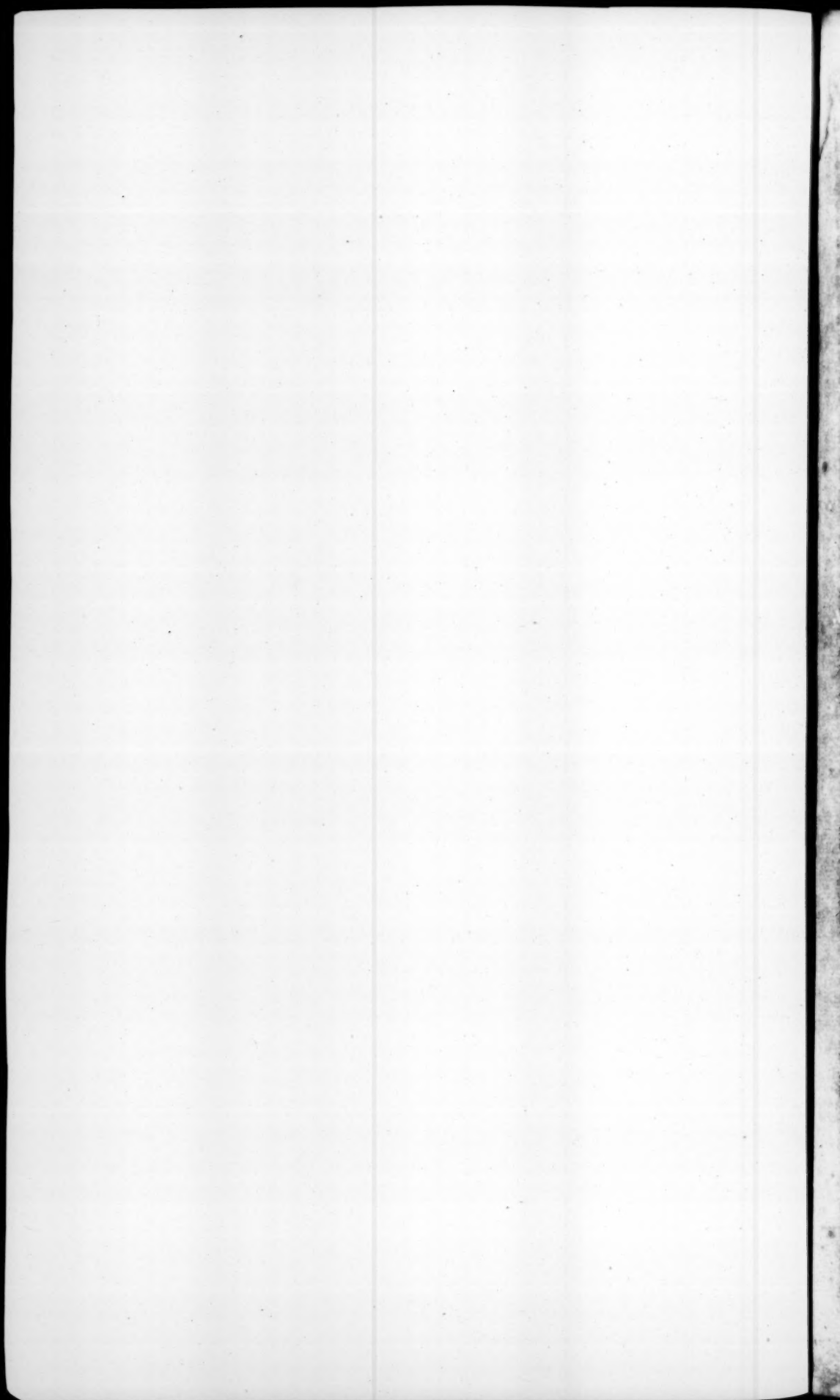
Intercepters.

But now Intercepters are administered, to the end they may drive back and incrassate the blood while it is in flowing unto the part; & that they may make more narrow those waies and passages by the which it floweth. But now such intercepting Medicaments are to be applyed unto the vessels by which the blood tenderth unto the wounded part; and so above upon the part, toward the root of the vessel; and more especially (where it possibly



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bly may be done) in the exterior parts where only the veins lie hid under the skin, and are not covered with much flesh: touching which Hippocrates (in his fifth Section, Aphorif. 23.) giveth us this advice. *We ought (saith he) to make use of some cold medicament, in those persons that have at present any blood flowing from them, or that are likely to be troubled therewith; and this medicament is not indeed to be applied unto the same place, but unto those places from whence it fl. with. & if there be any inflammations or burnings of the parts that tend unto a red or bloody colour (by reason of the fresh and flourishing blood that now appeareth therein) unto these very parts let it be administered.* Now these interceptors are made of Medicaments that are cold and Astringent, as *Posca* (a compound of vinegar and water) *barth wine*, the water of *Roses of Plantane*, of the *Oak*, and of *night shade*; *Barly meal*, the powder of *Myrtles*, *Bolearmenick*, *Dragon's blood*, *Mastic*; the flowers of red *Roses*, *Pomgranate flowers*, and the whites of *Eggs*, of which there are divers Medicaments to be made: the forms whereof are above propounded and set down (in the first part, Chap. 5.) among the defensives, in an inflammation. The Medicament being layd on, the part is to be bound up with a swath, that may bind close the vein toward the root thereof; and the ligature is not to be loosened before the third or fourth day; or indeed, it is not to be untied until the blood be thoroughly stanch'd. *Avicen* (in his *Quart. Quart.* tr. 2. Chap. 18.) tells us of this following medicament, that hath in it not only a power of burning, but likewise an astringent faculty; and a virtue also to generate and breed flesh: As,

Take *Chalcantum*, *Parger* made into a very fine powder, and sifted thorow a bayr sieve, of each twenty drams; *Frankincense* powdered six drams; *Aloes*, dry *Glee*, of each eight drams; *Arsenick* four drams; (I had rather here take *Mercury sublimate*, in regard that many who are ignorant of things Chymical and Metallick, of *Antimony* when sublimate in general is mentioned (and *Mercury sublimate* is ever more to be understood) there instead thereof these do substitute and appoint *Arsenick*;) let them be all beaten into a very fine and small powder, made up in a liniment, and imposed upon the orifice of the vessel. Some there are that unto this Medicament do add *Dragon's blood*, and the excrement *Hypocistis*.

But those internal medicaments that stanch blood, are either such as cool and thicken the blood, or else they are those we call *Narcoticks*. The coolers and thickeners are prepared of *Myrtle*, *Roses*, *Purslane*, *Lettice*, *Berberies*, *Ribes*, *Succory*, *Quince*, *Pom-*

*granates*, *Tormentil*, *Corals*, *Bolearmenick*, *Sealed Earth*. Out of which may be made Powders, Waters, Syrups, (and from these potions) and Electuaries.

There are likewise some certain things that are sayd to stay the blood by an occult and secret property: and thus *Strawberry Water* is much Commended in all hemorrhages. And the *Root of Corn-rose* (or *Cockle*) held under the tongue stoppeth the hemorrhage. And some there be that for this purpose commend unto us the roots of that *Cichory* that hath a white flower. And some there are that order the Patient to hold in his hand the *Jasper Stone*, or the *Blood Stone*.

*Stupefactive*s are not over commonly to be administered; neither indeed at all, unless the strength remain firm and entire; for fear lest that the powers being already much weakened, and fayling by reason of the over great loss of blood, should by these stupefactive be farther dejected: but if the Patients strength will admit of it, then we may administer one grain (or two at the most) of *Opiat Laudanum*. But now that the blood when it is stanch'd may so remain, for this the situation of the wounded part maketh very much; which ought to be such, that the Member may look upward, and be free from all pain. For pain doth very easily attract the blood, and cause it to break forth again; and the blood doth more easily flow unto a declining and downward place.

If yet the blood by this means be not stanch'd; they tell us that we are then to cast upon the vessel pouring forth the blood something to tye it withal; and especially toward the root thereof, by which the branch looks toward the Liver, or the Heart; and that the veins or Arteries are to be made naked and bare, to be layd hold on with a hook, and then presently with a thread (of silk especially) to be tyed, and the thread to be drawn very hard and close upon them; and then they appoint that the wound be filled up with flesh, before the bond be quite taken off. For if the flesh shal not first of all have filled up the place that is about the vessel, and have shut the very orifice of the vessel itself, the bond falling off, the hemorrhage wil again easily follow. But the truth is that these things are more easily required and commanded, then they are put in practice & performed. If a vein or an Artery wounded & pouring forth blood be wholly cut asunder, the blood is then the more easily stanch'd: for the vessel is drawn back, and on both sides contracted within it self; and so its orifice is covered and shut up by the bodies that lie round about it.



But the best, safest, and most easie way (if it be rightly ordered) of stanching the blood, is that which is wrought by Medicaments that stop and stay the Blood, and shut up the orifice thereof; as they were before propounded by us.

When the Blood shall be stoppt, the Wound is scarcely to be opened before the third day. And if the Wound be unbound, yet notwithstanding if there be yet any further fear of the Bloods breaking forth again, the Medicament is not wholly to be taken away; if it be not as yet moistened and vitiated by the purulent and sanious matter. But if by these it be made so moist, that it is ready of it self to drop off, another is in this case to be laid on, if there be yet any further flux of blood feared. And yet notwithstanding we are herein to deal very Cautiously, and with all manner of Circumspection; and with the one hand that part of the Vessel toward the Root thereof is to be pressed down close together, that so the flux of blood may be restrained; and with the other hand the Medicament is to be taken off, the moist Wound to be clean and dried, and a new Medicament laid on.

But now if the internal Vessels shall be so wounded that they can neither be tied together by any ligature; neither yet obstructed and shut up by any Medicaments laid thereon; then Medicaments out of those things that have in them a virtue to cool and thicken the Blood (and which were but even now mentioned by us) are to be provided; and a Dyet that is like and answerable thereunto (as we have said) is to be prescribed.

Now when the blood shall be fully stanch'd, and shall become clotted, then we must use the best of our endeavour to prevent the putrefying of it; but that it be rather dissolved: which in what manner it is to be performed, we have declared before. (in the 2. Book, Part 2. Chap. 6, and above in the first Part, and 16. Chap.) where what we have written may be seen at large: for in this Chapter it is our purpose only to treat of the stanching of the Hemorrhages of Wounds.

### The Dyet.

The Dyet is likewise so to be ordained, that it may stop and stanch the Blood; and to this end, Meats are to be provided, of *Rice, of Amylum, or the fine flour of Wheat, Barley, Pearls, Ribes, Quinces, Service, Medlars, Lemons, Endive.* The Patient ought to abstain from Wine. He must likewise keep himself from Rage and Anger, all Commotion of the Minde, and over vehement motion and Exercise of the Body; and therefore his

Adversary that gave him the Wound is not to be admitted into the Room where the Patient is.

### Chap. 15. Of the Wounds of the Nerves, and Tendons, in general, and of the pricking of the Nerves.

And moreover, the Wounds likewise of the Nerves, Tendons, and Ligaments, are for the most part of such a Nature that something in the Curing of them may fall out that is peculiar and proper to them alone. And first of all, as for what concerns the Nerves, as also the Tendons, (for what we shall speak touching the Nerves may likewise be applied unto the Tendons) they are of another Nature then the flesh; and therefore also (as we shall afterward shew you) they require other Medicaments then the wounded flesh doth; and furthermore they have a very quick and exquisite sense, as the Tendons likewise have; and thereupon if they be hurt they bring great Pains and Convulsions. Now the Wounds of the Nerves are twofold; to wit, Pricking and Incision; according as the wounding Instrument inflicteth the Wound, either by a Prick or a downright Cut.

### Signs Diagnostick.

Now the Wound of the Nerve is known first of all, from the Consideration of the wounded place; and from Anatomy, which acquaints us with the Nerves that are in every Member, and how they enter and are situated in them. For which cause, it is likewise to be considered, whether the wound be in the Heads of the Muscles, or in the ends of them; and whether the wound be above upon the Joynts, or else in the very Joynts themselves; for if it be in the Heads of the Muscles, it betokeneth that a Nerve is wounded; but if it be in the ends, and near the Joynts, it is sign then that a Tendon is wounded. And moreover, from the vehement pain that immediately after the receiving of the wound testeth the wounded person, unless the whole Nerve be cut assunder transversely or vertically. For the Nerves have a very quick and exquisite sense; and therefore, when these are prick'd, there instantly ariseth in the wounded part a vehement pain, and upon this an inflammation; and to the Brain being drawn into a Consent, oftentimes Convulsions and Deliries are excited. But now the Tendons, although they are not endued with a sense altogether so quick and exquisite; yet never-

nevertheless, even these (they being not wholly void of sense and feeling) when they are pricked, there are also pains, and from thence Convulsions excited.

### Prognosticks.

1. All Wounds in the Nerves are dangerous, by reason of that exquisite sense they have, and their Consent with the Brain. And yet notwithstanding, a Wound by pricking is more dangerous then that that is made by cutting, as after wards we shall shew you.

2. The Wounds of the Tendons are less dangerous then those of the Nerves.

3. That Convulsion that happeneth upon a Wound is Mortal, as we find it, in the 5. Sect. Abbor. 2. Which is to be understood of the Wounds of the Nervous parts. And yet notwithstanding, the Greek word *Thanasimon*, and the Latine, *Letale*, (as Galen explaineth it in his Comment) do not here signifie that which of necessity and evermore bringeth Death, but only that which is very dangerous and oftentimes causeth death.

4. Those that with their Wounds (as suppose, those of the Nerves) have conspicuous Tumors, these are not greatly troubled with Convulsions, neither with madness; but those in whom the said Tumors suddenly vanish (if this be done in the binder part) unto such Convulsions and the Tremors do usually happen: but if it be on the forepart that these Tumors vanish, then there will befall them madness; a sharp pain in the side, as Empyema and Dysentery, if the Tumors be of a Reddish colour. Sect. 5. Aph. 65.

Yea, what we find in the 5. Sect. Abbor. 66. (and which we have above alleged touching wounds in general) hath place here more especially; to wit, if the Wounds being great and dangerous there shall a Tumor be seen to appear, it is then a very ill sign. For in no kind of wounds are Inflammations more easily excited, then in the wounds of the Nerves. And therefore, if there be present any Cause and occasion of a fluxion; and yet nevertheless a Tumor shall not happen thereupon; it is then a sign that either the matter is driven to some other place, by repelling Medicaments, and so detained in the more inward and deep places and parts of the Body, or else that they are by Nature her self thrust unto some other place.

And yet notwithstanding there oftentimes appear no Tumors at all in such kind of Wounds; to wit, if the Physick take away all the Causes of fluxion, or if that Nature herself shall allay and assuage the violence of the Humor. And there is always ground of good Hopes, if even unto the seventh day

there shall follow no evil thereupon: for it is a sign, that Nature hath appeased the motion, and the impetuous violence of the Humors: touching which, Galen (in his third B. of the Compos. of Medicam. according to their several kinds, and 2. Chap.) thus writeth: If unto the fifth, or even unto the seventh day of the Disease, there be neither Phlegmone so much as appearing, and that there be altogether a freedom from pain, and that the sick person feel no extension and stretching in the part affected, he shall after this time be safe and secure.

7. The wounded Nerves do very easily likewise conceive a putridness; since that they have in them but a weak heat, and are of a very dry Nature, and so may be easily hurt by those things that are moist; whereupon it is that Water and Oyl are enemies unto the Nerves. Neither is that putridness and Corruption contained in the wounded part alone, but it is likewise communicated unto the neer neighbouring parts; yea and oftentimes also unto those parts that are more remote. Whereupon it is, that the hand being wounded, or but the Finger only, the pains are wont to appear in the Arm and Shoulder; and that the Leg being hurt, there are wont to be in the Thigh not only pains, but also Impostumations; and that the Malady is imparted not unto one of the sides alone, but even unto that also that is opposite. Yea and in the whole Body likewise the Humors are corrupted; whereupon fevers, pains in the sides, and Dysenteries are wont to be excited. And (that which we are here to give you notice of, and not to pass it over in silence) there are not evermore present signs that betoken an Inflammation or putridness; yea and oftentimes there are likewise present no vehement pains; but that very often secretly and suddenly the Convulsion invadeth the wounded persons. For the vitious matter being thin and depraved is hiddenly carried by the Nerves unto the Brain, (as we see that this is done in the Epilepsie or Falling-sickness) a poysonous Air ascending unto the brain from the extreame parts, without any notable pain in those parts by and through which it passeth. Of which thing we meet with many examples, and how that the wounded persons, without any pain and Inflammation, have been suddenly surpris'd with a Convulsion, and have instantly died thereupon. And therefore in the Wounds of the Nerves, although that there shall be no pain felt, neither any Inflammation appearing; yet notwithstanding, we are not to trust to this; but for all this the Cure is carefully to be looked and attended.



## The Cure.

Touching the Curing of the Wounded Nerves, *Galen* (in his sixth Book of his Method of healing, Chap. 2.) taketh a great deal of pains in treating thereof. But seeing that in all Wounds of the Nerves pains and inflammations easily make their approach, and threaten the patient, we must endeavor that the pain may be mitigated, and the inflammation prevented. And therefore if need require, both by letting forth of the blood, as also by a purging out of the sharp and thin humors, their afflux unto the affected part is to be restrained and prevented; but the wound it self is to be kept open, that to the excrements may the more freely flow forth. For the Chiefest cause of pain in Wounds of the nerves is the excrementitious matter shut up; which being over long detained getteth to it self a depraved quality, pulleth and twingeth the Nerves, and at length putrefieth. And therefore those Medicaments that are called *Enemata* (although they may be very fit and proper in bloody Wounds, and those of the fleshy parts, in regard that they speedily close & shut up the wound, yet) here in this case are no ways convenient. Neither is water fit & proper nor yet any thing that is cold; since that (as *Hippocrates* writeth in his fifth section, *Aphorif. 18.*) every thing that is cold is an enemy to the bones, teeth, Nerves, Brain, spinal marrow; but that which is warm, a friend unto them. Yea neither ought other Medicaments that are actually cold to be administered unto the wounded parts. For seeing that the Nerves are parts voyd of blood, and having in them but very little natural and innate heat, and endued with a most exquisite sense, they are soon and easily offended by any thing that is cold, (it being biting and causing pain) as *Hippocrates* writeth in the 20. *Aphor.* of his fifth Section, and as *Galen* likewise teacheth thus, in the sixth Book of his Method of Curing, Chap. 2. But yet things that are blood-warm are not sufficiently commodious; touching which *Galen* (in his sixth Book of the Composition of Medicaments according to the kind, Chap. 2.) thus writeth Let the oyl (saye he) with which we cherish the wound be sufficiently hot, lest that otherwise it offend such a wounded part. For like as that which is cold is, most of all contrary unto these kind of Affects; so likewise that that is but blood-warm is not very much a friend unto them. And a little after: and for the Reason (saye he) my self chuse rather to make use of a fortification of oyl that is sufficiently hot, than of a fortification that which is but like-warm, but most of all refusing that which is quite cold. And

yet Nevertheless, if there be a nerve discovered and made bare, *Galen* then administreteth rather such things as are but tepid or Luke-warm, then those things that are very hot; as we may find in the sixth Book of his Method of Curing, and Chap. 3.

But although that for the asswaging of the pain, that which is hot and withal moyst is most useful and convenient; yet nevertheless, in regard that under those things that humectate and moysten the Nerves do easily putrefy, therefore for all Wounds of the Nerves those Medicaments are most accommodate and proper that in their activity are temperate, (or somewhat tending unto heat) but that in passives do dry; and that are of thin parts, that may corroborate the weak heat of the Nerves, by consuming and drying up the excrements; touching which *Galen* (in his sixth Book of the Method of Curing, and 2 Chap. 3.) writeth in this manner: The faculty of the Medicaments of the wounded Nerves ought to be both thin, and also moderately heating, and such as may dry without any pain; in regard that this alone can draw the Sanies (or thin excrements) from the bottom of the Wound, without either contracting, or biting of the part. And then a little after, the Wounded Nerve (saye he) require such Medicaments that may excite a tepid or Luke-warm heat, and may strongly dry; and which from the Nature of their own substance have both a power of drawing, and are of thin parts. And the same he teacheth us in his third Book of the Composition of Medicaments according to the kind, Chap. 2. And such like Medicaments have in them this benefit likewise, that although they are endued with a faculty of drying, yet notwithstanding they do not conglutinate the surface of the Wound seeing that they have both an attractive power, and yet nevertheless are free from and void of an Astringent faculty. And yet notwithstanding regard ought to be had unto the nature of the Wounded person; and unto the softer and more tender bodies the weaker Medicaments are to be administered; but unto hard and strong bodies those medicaments that we administer may be the stronger. And there is also regard to be had unto the matter that is to be dried up; and according to the store of the humidity we are to make choice of Medicaments that are conveniently drying. For as *Galen* (in the place last alleadged, to wit, the third Book of the Composition of Medicaments according to the place, and Chap. 3.) layeth that in a very copious humidity the increase thereof requireth to be dried up by a Medicament that is more then ordinary drying; if it be but little, then by a medicament that doth this moderately; and if it be much,





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hen by a Medicament that dryeth much; and yet nevertheless, not extremely, neither in the highest degree. For there ought to be a proportion answerable between the quantity of the humidity and the drying of the Medicament. And if there be also any of those drying Medicaments, and of thin parts, (which are of fit use in all Wounds of the Nerves) that have adjoyned with them a Notable heat, and a biting Acrimony, and thereupon may easily excite both pain and fluxions, (such as are destilled Balsams, spirits, and oyls) their heat and acrimony (unless of its own accord it soon vanisheth, as it commonly happeneth in the spirit of Wine) is to be tempered and Mitigated by the mingling together of other things with them.

Such like Medicaments as these, that are useful in all Wounds of the Nerves, are propounded by Galen in his sixth Book of the *Method of Curing*, Chapt. 2. and in his third Book of the *Composite of Medicam.* according to the kinds, Chapt. 3. 4. and 7. and they shall be likewise declared by us anon, when we come to speak of the pricking of the Nerves.

But now that the pain may be asswaged, the temperament of the part preserved, and the Afflux of humors, and the inflammation may be prevented, there are not only convenient Medicaments to be imposed upon the part affected, (of which we shall speak by and by) but even at the parts also that lie in the midst from the wound to the beginning of the Nerves are to be anoynted and cherished with hot oyls, to wit, the Oyl of Earth worms of White Lilies, the Oyl of a Fox, the Oyl of Costus, the Oyl of Castor, and the like. And Galen commands us thus to do, in the sixth Book of his *Method*, and 3 Chapt. And therefore, if the Nerve be of those that appear in the Neck, then the Arm from the Wound even unto the Armpits and the Neck, is to be anoynted. But if the nerve be of those that are found in the Legg, then the Groyns are to be anoynted; and we must ascend in anoynting from the Groyns (by the Backbones) even unto the head and Neck.

But since that the Prognosticks, as also the use of those Medicaments doth somewhat vary (according as the Nerve is wounded either by pricking, or by a down-right cut) we shall therefore speak of the Pricking and incision of the Nerves in special; out of which those things that in the general seem necessary to be spoken of touching the cure of the wounds of the Nerves, will the more clearly appear.

## Of the Pricking of the Nerves.

### Signs Diagnostick.

Now it may be known whether the Nerves be wounded (yea or no) by pricking, from the kind of the weapon it self, and the condition of the Wound; to wit, if it be narrow, and yet notwithstanding a great and grievous pain followeth; and upon this a beating, an inflammation, a Fever, and a Convulsion: which symptoms do never happen, where the Nerve is wholly cut asunder. For when the Nerve is wholly and transversely cut in two, it no longer continueth its commerce with the Brain; Neither can it draw the same into a Consent with it; and so there can be no pain, neither convulsion excited.

### Prognosticks.

1. The Pricking of the Nerves is the most dangerous among all the wounds of the nerves: for as Galen writes (Art. Med. and Chapt. 92.) the Pricking of a Nerve and a Tendon, by reason of the vehemency of the sense, and because that this part is continued with the principal part the head, it is thereupon very apt and ready to excite a Convulsion of the Nerves, and then more especially when nothing at all breaketh forth, the wound in the skin being closed and shut up. And in his sixth Book of the *Method of Curing*, Chapt. 2. he saith thus; Where a Nerve is pricked, there of Necessity a pain must invade the person greater then the pain that is in any other of the parts; and then of necessity a Phlegmone must soon follow thereupon.

2. And yet nevertheless the pricking of the Nerve is so much the more dangerous, by how much the body that it lighteth upon is impure, and ill disposed: touching which Galen (in his sixth Book of the places affected, Chapt. 2.) thus writeth; If any one whose Wounds do easily heal be pricked with a Needle, this man alibough without any Medicament, and the member altogether bare and naked, may betake himself unto his accustomed labors and business and yet find nor feel no hurt at all; but if any one whose Wounds are hard to cure, shall so do, (especially if he be either Plethorical, or else oppressed and full of bad humors, that is to say, Cacochemical) this party will indeed at the first feel much pain; and afterward likewise the part affected will be infested, not only with a Pulse and beating, but also with a Phlegmone.

3. If in the prickings of the Nerves there appeareth a Tumor, and that it afterward suddenly



suddenly disappear and vanish, then a Convulsion and a Deliry arise, as before (out of the 5. Sect. and 65. Aphorism,) we acquainted you.

### The Cure.

That Indication that is common in all the wounds of the other parts (to wit, that what is dissolved must be again united) this hath likewise its place in the prickings of the Nerves. And yet notwithstanding, in regard that when a Nerve is prickd, (by reason of the Acrimony of the sense which it hath) there followeth a greater pain then in the other parts; and upon this an Inflammation: in the pricking of the Nerves therefore this ought to be the main care and endeavour of the Phylitian, that the said pain may (if possibly) be prevented or at least mitigated and moderated, and however that the Inflammation be by all means prevented. Now this is prevented, if there be not heaped up in the wound those excrements that may bring pain. Now these may be kept from heaping up, if from all parts of the Body the vicious Humors be not permitted to flow unto the part affected, to wit, the wounded place; and if that those which are gotten together in the wound be not suffered thereto continue, but be forthwith evacuated: Which may be performed if the Skin, as likewise the wound of the flesh that lieth upon the Nerve, be kept open; or if the wound shall not be open enough, that it be made yet wider, and the Skin cut wider by two incisions made at the right Angles, that so by it there may be opened a more free passage forth for those Excrements that are heaped up in the Wound.

And therefore in the pricking of the Nerves there are three things principally to be done; first the Body is to be purged from vicious Humors, the pain to be mitigated, and a passage made for the Excrements, that so they may be emptied forth and taken away.

But now after what manner the whole body is to be purged, we have often told you before. But upon the wounded part there are Medicaments to be imposed, which both mitigate the pain, and open a passage forth for the Sanies or thin Excrements, and that draw forth the Excrements that lie hid very deep, even at the bottom of the Wound. And if the wound be over narrow, it is then to be made wider either by a Section made across (in the form of the Letter X) so that the prick be the Center of the Sections, or else by Tents that may dilate the Skin, but yet not touch the Nerve.

And yet nevertheless, for the moderating

of the pain, neither is warm water, or that that is hot and moist, thought to be convenient; (since that Water and all cold things are enemies unto the Nerves; and those things that are hot and moist may easily excite a putridness in the Nerves;) but we ought rather to use Oyl of a thin substance, as that of *Earth-Worms*, or such like. And it will be likewise to very good purpose, to anoint the part about the wound with Oyl somewhat warm, of most thin parts, and not astringent. Or, if you cannot get enough of such an Oyl, then use the Oyl of white Lillies, of *Earth-worms*, or *Camomile*, of *Dill*, or of *Melilote*. But if the pain shall not yet cease, and that an Inflammation be nigh at hand, it will then be very requisite to impose some Cataplasme to qualifie and mitigate the pain; and this may be made of *Birley Meal*, *Bean Meal*, the *Meal of the Vetch Ervum*, and that of *Lupines*, *Betony*, *Camomile flowers*, and Oyl fully ripe. For such like Cataplasms do assuage pain, thoroughly dry, and discuss, resist putridness, Cherish and strengthen the Native heat; and therefore in the wounds of the Nerves and Tendons they are very fitly administered: and especially, such are then to be made use of, when the Nerves begin to be enflamed, and to putrifie; and then those Cataplasms are to be made with Oxymel or else with a Ley; and the same Cure (almost) is to be instituted, and in the same manner to be ordered, as it is wont to be in a Gangrene but now beginning.

And therefore in this all Authors agree, and Practise it self and experience teach us this, that in all prickings of the Nerves we ought to abstain from all things cold, Astringent, and moist; and that we are to use those things that are hot, dry, and having a thin substance: or (as *Galen* saith) all our Care and Counsel must be directed and tend unto this, that the faculty of the Medicaments be both thin, as also meanly and indifferently heating, and such as may dry without any pain. For these alone can draw from the bottom of the wound the Sanies or thin Excrement, without either contracting or biting any the least part thereof.

But although that this indeed be out of doubt, that the Medicaments that are administered unto the prickings of the Nerves have such a like faculty (as ere while we told you of) to wit, to dry up and discuss the thin Excrements, and to draw from the bottom of the wounds; but then whether they yet do nothing else but this, and whether their being administered be to no other end, of this I much doubt. And that which causeth me so to doubt, is that which hath been spoken above in the *eighth Chapter*, touching Sarcoticks.

Sarcoticks. For whereas in that place I have shewn, that it is not at all absurd to determine that the chief and principal end of all Sarcotick Medicaments is this, that they may Corroborate the heat of any part whatsoever, that so Nature in the generating of flesh may so much the more rightly discharge its office; this is especially requisite in the wounded Nerves, Tendons, and Ligaments. For since their heat is far more weak then that of the fleshy parts, this heat is yet further debilitated in those that are wounded; and therefore they are not able rightly to Concoct and Assimilate the Aliment that floweth unto them; and from hence it is, that this Aliment is converted into *Sanies*; and by how much the greater the weakness is, by so much the greater is the store of such *Sanies* that floweth out. And moreover in regard that the Nervous parts are endued with a most exquisite sense, they are easily affected with a pain likewise, upon occasion of which the virious Humors flow unto them from all other parts of the Body. And from hence it very often happeneth, that from the wounded Joynts, (and especially in the Arm, or Knee; and yet more especially, if there be present an Inflammation) there is never any laudable Pus generated, but there floweth forth great store of this *Sanies*, which our Chirurgeons call *das Glied VVassel*, or the Joynt Water; and some of the more ignorant of these Chirurgeons think it to be the genuine Humor of the Joynt it self; and thereupon they endeavour to obstruct and stop the afflux thereof, by I know not what kind of Medicaments; when as notwithstanding there cannot be contained so much Humor in all the Joynts of the whole Body, as we shall sometimes have flowing forth of such a wound in one day: and the said Flux can no way be stanch'd, unless unto the wounded part there be restored its own Natural Temper: of which likewise *Johannes Lanzius* gives us notice, in his Preface to his Medicinal Epistles; and in his first B. and third Epistle.

But now for those Medicaments which experience hath taught us to be very useful in all wounds of the Nerves and Tendons, and more especially in the Wounds that are caused by prickings, they are, Oyl fully ripe, such as is two yeers old, rather then new; the Oyl of *Earth worms*, of *Rue*, of *white Lillies*, of *Costus*, of *Castor*, of *Turpentine*, (this last may be used alone of it self in Children, Women, and such as are of a more moist and soft Constitution of Body; but in such as have drier Bodies, there may be some *Euphorbium* mingled therewith) *Ammoniacum*, *Galbanum*, *Root of round Aristolochy*, *Dittany*; and generally all Roots that are bitter without

Astringion; *Propolis* of *Beehives*, in the same manner, either alone, or else with *Euphorbium*; instead of *Euphorbium* *Sagapennum* may likewise be therewith mingled; the distilled Oyl of *Turpentine*, the *Sweat* or *Tear* of the *Fir Tree*, and other Artificial Balsams. *Galen* likewise commendeth an Emplaster that is made of *Wax* one part; *Turpentine* and *Pitch*, of each half parts; *Euphorbium*, the twelfth part: touching which see further in *Galen* his sixth B. of the *Metb. of Curing*, Chap. 2. where he taketh great pains, and is very Exact and Large in treating of the use of *Euphorbium* in the wounds of the Nerves; the Sum and substance of all which is this. Whereas no one can possibly comprehend the use of *Euphorbium* by measure, both by reason of the different age of the *Euphorbium*, as also by reason of the various Natures of Bodies; we ought therefore to heed what this *Euphorbium* is, to wit, whether new or old, and in what proportion it is to be mingled. For the old (which is more yellow and more Pale then the New, but more hard and dry of Consistence) is less efficacious; and although that it keep some of its virtue unto the third year, yet in the fourth, fifth, or sixth yeer, it is then so decayed, that in the process of time it is altogether useles and good for nothing. And therefore the new is to be mingled with a triple quantity of *Wax*. As,

Take *Euphorbium*, one ounce; *Wax*, three ounces; Oyl, ten or twelve ounces.

But when it is become a little old, it ought then to be mingled in somewhat a greater proportion; and there must be added thereto one part and half (or two parts if it be three or four yeers old) more then formerly when it was new: that is to say, a double weight unto the former; or if you please it may in weight be equal unto the *Wax*, in which thing notwithstanding use is much to be heeded and attended. For if the wounded person shall complain of any biting that he feels from the said Medicament; and the parts lying about the Puncture shall appear to be hot, then the Puncture or Pricking it self is somewhat more swelling then is fit, and the Lips of the wound will be some thing affected with an Inflammation; and we may conclude that the Medicament is stronger then it ought to be: and therefore either the strength of it is to be abated and qualified by the admixture of the greater store of Oyl, or else the older *Euphorbium* is to be taken. But if the Contrary shall happen, then the strength of the Medicament is to be augmented, either by mingling a greater quantity of the old, or else by the admixture of the newer *Euphorbium*; for that mixture that hath in it a triple proportion of *Wax*, is the strongest; that which

hath a five-fold quantity of the said Wax, the weakest; and the mixture having but a quadruple proportion of the Wax, is in a mean betwixt both.

*Galen* (as we may see in his third B. of the *Compositio* of Medicaments according to their kinds, and 2. Chap.) mentioneth likewise other things that are to be made use of, as live Sulphur, unstaked Lime washed; Arsenick, Sandarach, Pompholyx, the scourgings of Brass, Chalcitis (or red Vitriol) burnt. But in all these he had only a regard unto their drying faculty; and he would only have the Medicaments to be so made and Compounded, that they might be able to cal forth and consume the Excrements out of the Wounds of the Nerves. But unto me (as I told you before) it seemeth far more probable, that such Medicaments are to be made choice of, that may wishal Corroborate and Augment the Native heat of the Nerves, which of it self (and especially in the wounded Nerves) is very weak.

And therefore this latter Age hath found out Medicaments that are far more safe; both such as are prepared by the Chymical Art, as also such as are brought unto us out of other Countries; yea and such as are very ordinary at home among our selves; and such as do their office without causing any pain (that is easily brought upon the Patient by the use of those stronger Medicaments that the Ancients made use of) and which may be safely applied, whether the Nerve be naked and bare, or whether it be covered (whereas in the Nerve that is bare all those Medicaments of the Ancients cannot be made use of with any safety) such as are these; Balsam of Peru, the distilled Oyl of Rosin Turpentine, and the Rosin of the Fir-Tree, Wax, Oyl or Balsam of St. Johns wort, the spirit of Wine, Gum Elemi, Gum Tacamahaca, and Gum Caranna. All which obtain that faculty which by *Galen* and the Ancients is propounded, and have in them no Corroding quality at all; and wishal obtain a Balsamick virtue (as those of our times term it) which those other of the Ancients are void of; and they do not only consume the Excrements, but they likewise greatly strengthen the Native heat of the wounded part, and are all of them very agreeable and suitable unto the Nerves. *Cesar Maganus*, in his second B. of Wounds, 5. Chapter, mentioneth these several forms following.

Take Ammoniacum, Opopanax, Sagapenum, dissolved in hot water; Propolis, and Turpentine, of each half an ounce; Oyl of thin parts, two or three years old, in which Earib-worms have been boyled, one ounce and half; Mingle them, and make an Unguent. Or,

Take Cleer Turpentine, the exudation or

tear of the fir tree, of each one ounce; Tacamahaca, half an ounce; Caranna two drams, Balsam of Peru, three drams; Propolis six drams; our oyl of St. Johns wort, one ounce; Mingle then, and make an Unguent; Or,

Take Sagapenum, Opopanax, Propolis, of each half an ounce; Tacamahaca three drams; the distilled oyl of Turpentine, or the sweat of the fir tree, one ounce; Sulphur that hath not come neer the fire, one dram and half; Mingle then, and make an Unguent. Or,

Take Tacamahaca, Opopanax, Propolis, the sweat of the Fir-tree, of each two drams; Artificial Balsam, six drams; Mingle them, and make an Unguent. Or,

Take Artificial Balsam, our oyl of St. Johns Wort, of each half an ounce; Burning water (which the Latines call *Aqua ardens*) or the water of Balsam, three drams, and mingle them. Or,

Take Diachylon with Gums, one ounce; Tacamahaca, Caranna, Sagapenum, Propolis, Rosin of the Pine, Ship-pitch, of each three drams; Artificial Balsam, half an ounce, Euphorbium two scruples; Mingle them and make a cerot. Or,

Take The oldest Leaven one ounce and half, Doves dung, or Brimstone, one dram; Aqua Ardens, or Water of Balsam, as much as will suffice; that the Medicament may have the consistence of Honey; and so mingle them. Or,

Take Oyl of Turpentine, or the sweat of the Fir tree, one ounce; Sagapenum, Propolis, of each half an ounce; Euphorbium one dram; mingle them.

And if the Medicament that is layd on be of a thin substance, or (as the Chymists speak) volatile, which may easily be dissipated; then we are to mingle therewith all Turpentine and Gum Elemi; for else we must impose an Emplaster of Gum Caranna, Tacamahaca, dissolved in the compound Oyl St. Johns wort.

### The Diet.

There is likewise regard to be had unto the diet. The Air in which the Patient is most conversant ought to be somewhat more warm then ordinary, since that the Cold is an Enemy unto the Nerves; as in the fifth Sect. Aphorif. 18. And therefore likewise the Wounds of the Nerves are not over often and without very great cause to be uncovered; and when they are uncovered, a Candle must be lighted, and a pan full of hot coals must be in a readines; and this new binding up must be hastened, and performed with all possible speed. Let the sick person abstain from wine. The affected part is softly and gently to be placed, and kept in quietness. For (as *Celsus* saith, in his fifth



fifth Book, and *Chapt. 26.* ) the best of all Medicaments is Rest and quietness: and to move and walk (unless for such as are found) is altogether unfit and improper. Yea moreover, we have two histories that tell us, that Laughter may bring very much danger and damage in the wounds of the Nervous parts. These Histories we find taken notice of by *Guilhelm. Fabricius*, in his first Century, *Observat. 23.* Let Anger likewise, and the passions of the mind be avoyded. And let the patient at this time abstain from Venery that which is of all other things most hurtful unto him; as we are sufficiently taught by the history of that young man in *Guilhelm. Fabricius* his first Cent. *Observat. 22.* who being now almost perfectly well, and recovered, dyed upon this very cause and no other.

### Chap. 16. Of the downright Wounds of the Nerves, as also of the Ligaments, by Cutting.

But now if the Nerve or Tendon be wounded not by pricking, but by a downright cut, we are then to look whether the wound be longwaies, or whether it be transverse, and overthwart: and then whether the Nerve be wholly cut assunder, or else be but only in part Wounded; and how much of the skin lying over it is divided.

#### Signs Diagnostick.

The pain, if the Nerve be Wounded by a Cut, but not wholly divided and cut assunder, is not so great as if it be Wounded by a prick: and yet nevertheless for the most part it is even great enough. But if the Nerve be wholly cut assunder, there is then no pain at all felt, but yet nevertheless the sense and feeling, or else the motion of the part into which the Nerve is inserted, is taken away. And so likewise if the Tendon be wholly dissected, the motion of the Member is taken away.

#### Prognosticks.

1. If the Nerve be Wounded in the length thereof, then there is no great fear of a Convulsion, seeing that the fibres are not so much affected: but if it be wounded transversely, and yet not wholly cut in two, it may indeed bring upon the person all those symptoms (to wit, pains, inflammations, a Convulsion, and Deliries or Dotings) which the pricking of the Nerve doth: because that from the fibres that are cut assunder the pain and hurt is communicated unto those fibres that are not dissected and divided; and from hence proceed pains, fluxions, inflammations,

and other evils; and at length the Malady is communicated unto the brain it self; from whence there arise Convulsion fits and Deliries.

2. But if the Nerve be wholly dissected, it doth not indeed bring along with it so much danger, neither is there any fear of a Convulsion: but yet nevertheless there is another incurable Malady that followeth it, to wit, a debility both in sense and motion of that part into which the Nerve is inserted, whenas the animal spirit can no longer be carried by the Nerve into the said part.

3. If any Tendon shall be wounded, but not wholly dissected, it causeth a debility of motion in that part that it moveth: but if it be altogether cut assunder, then the motion of the said part is altogether abolished and taken away.

4. If there flow forth great store of *Sanies* or thin excrement, it is then a sign and token of that ill constitution of the part affected; and that it is inflamed, and altogether in great danger. Now this *Sanies* floweth forth according to the various disposition of the part affected, sometime resembling as it were water, and sometimes like whey of milk; and sometimes as it were white and milkie; but that which floweth forth of the Tendons is more glutinous, like unto the white of an Egge. And I well remember that in a certain Student there issued forth of his knee that was much wounded (day by day) a certain matter like unto the white of an Egg, but that it was somewhat whiter, and a little thicker; (and yet nevertheless altogether such as *Celsus* describeth in his fifth Book, and *Chapt. 26.* which he calleth *Meliceria*, because that it is like unto white honey;) which flowed forth in that abundance, that an Egghel could scarcely contain it.

#### The Cure.

The way and Method of Curing these Wounds is in the most the very same indeed with that which we mentioned in the foregoing Chapter; yet notwithstanding there are some things that are peculiarly to be attended. As first of all, those Nerves that are wounded by a downright cut are most commonly left naked, and bare of any skin to cover them and therefore we are to use our best endeavor, that they may not be exposed unto the external Air, in regard that the external cold Air (as we have often told you) is an enemy unto the Nerves. And therefore we are to do the utmost of our endeavor, that (as much as possibly may be) they may be covered with their own proper covering, and the skin that lieth upon it; and therefore if the Nerve be wounded according unto

its length, then with a twath the lipps of the Wound are to be drawn together and conjoynd; but if the Wound be transverse, and that necessity so require, there is then a future or sewing of the lipps to be attempted; and yet great care must be taken, and all diligence used, that (if the future or stitching be wrought with the needle, which yet notwithstanding may easily be avoyded, as we told you before) the Nerve it self be not rouchd with the Needle. For if in the sewing it should chance to be prickd, the very same symptoms may happen that are otherwise wont to arise in the pricking of the Nerves. And yet nevertheless the wound is so to be drawn together, that there may still stand open a free passage forth for the Sanies; which (if need so require) may be done with a Tent; lest that if the said Sanies be retained and kept in, it should corrupt and putrify the nerve. The nerves also when they are wounded will not bear those stronger biting Medicaments, of Euphorbium, and the like. And therefore in such kind of Wounds as these Galen was wont to use a Medicament of quick or unslaked Lime often washed with much oyl of roses mingled therewith; as also that Medicament of Pompholyx, if it be mingled with good store of oyl of Roses. But those Medicaments that have been found out by those of latter times are safest of all other; of which we have already made mention in the Chapter immediatly foregoing. But then the Wound it self may be externally covered with the Emplaster Diachalcites, or Diapalma, or the Nerve Emplaster, or any other that shal be known to be fit and convenient. Galen (in his third Book of the Composit. of Medicaments according to their kinds & the third Chapt.) propoundeth and mentioneth these kind of Emplastres; and there are many likewise of them extant in the writings of the latter Physitians; of which we have also in the former Chapt. 8. (touching vulnerary Medicaments) made mention; and given you some of the Chief of them. And this Unguent is also very good and useful; which they usually term the Unguent for the Worms.

Take Centaury the less, the lesser Plantain, Hounds tongue, Mouse-eare, the greater and lesser Consound, the herb horse-taile, and Milfoyl, of each of these one handfull; of Earthworms half a pound, Common oyl one pound, Wine one pint and half, Vinegar four ounces. Let them be all wel mashed and thoroughly mingled together, and so let them stand fermenting for seven daies together. And then after this, adde thereto, of the sweat of a Ram taken clean from the skin one pound; ship pitch and Rosin, of each one quart. Gum Ammoniacum, Gal-

banum, Opopanax, dissolved in Vinegar, of each half a dram: let them be all boyled together over a moderate and gentle fire, until the wine and the Vinegar be all consumed, and then let them be strayned. And so soon as they shal be cold, add of Turpentine one ounce and half; of Frankincense, Mastick, Sarcocol, of each three drams; Saffron two drams; let it be wel stirred about with a Spatula, or else with a Pestle in a Mortar: and if it seem good, to cause a Consistence, Wax may also be added.

And whereas by reason of the Scarcity of natural heat in the Nerves, there can hardly be made a good suppuration, but rather a Putridness and Corruption of the humors; a Cataplasme that may inhibit and resist the said putridness is to be imposed: which will likewise perform this good office, to wit, of defending the Nerve (unto which cold is an Enemy) from the Injuries of the External Air. This following is also very useful.

Bean Meal, Barley Meal, and the Meal of the Pulse Ervum, the powder of Camomil flowers, and Red Roser, as much as you think fit; with Oxymel simple, and the Oyl of Roser and Earthworms Compounded together, make a Cataplasme.

And seeing that in the Nerves transversly wounded, and yet not altogether cut assunder, the Brain by the fibres that are whole and entire may easily be drawn into consent, so that a Convulsion may be excited; this Convulsion ought (as much as is possible) to be prevented, by those Medicaments that have hither unto been propounded; and if it shal happen, you must remove it by those Remedies that we shal set down below in the Chap. 23. or if this may not possibly be done and that the Medicaments are not sufficient to effect it, then the whole Nerve is to be cut in sunder, that so the Convulsion may be removed. For although that thereby the part be somewhat debilitated, and may come to suffer a stupidity and insensibleness or else some hurt of the motion; yet better it is to bear this inconvenience, then suffer death.

#### Of the Wounds of the Ligaments.

The Ligaments (in regard that they are voyd of sense) when they are Wounded produce neither pain, nor Convulsion; neither do they of themselves communicate their Affects unto the Brain. And more especially, the wound of that Ligament which tendereth from one bone to another, is most of all free from danger. But that which is inserted into a Muscle, (in regard that it is able to draw the Nerves and Tendons into a consent with it) if it be not rightly cured may bring a great deal more danger along with it. For because that even the very Ligaments

gaments themselves have but a very weak heat, therefore they wil not easily bear Wounds; but they are very apt and ready to heap up many excrements, that may contract a Putridness, and excite other Maladies and mischiefs; and therefore of those Medicaments that are useful in the Wounds of the Nerves and Tendons, those of them that are most drying are to be administred: and indeed we may with safety enough make use of them, since that this part is destitute of sense, and therefore may not easily be offended with the Acrimony of the said drying Medicaments. But yet nevertheless, in regard that it seemeth to me, that (as we told you before in the foregoing Chapter) such like Medicaments are wont to be administred not only for drying, but to the end likewise that they may cherish and strengthen the weak heat of the part, therefore we conclude that such of these drying Medicaments are to be made use of that do no way debilitate & dissipate the weak heat of these parts; but rather such as do cherish and corroborate it.

### Chap. 17. Of the Wounds of the the Joynts.

**T**HE Wounds of the Joynts are very nearly related and of kin unto the Wounds of the Nerves; to wit, those that happen in the Elbow of the Arm, the Knee, or the Joynts of the fingers: and these are either with a luxation or looseness of the Joynt, or else without it.

#### Prognosticks.

Now all such Wounds are dangerous; since that the Joynts are very apt and readily prepared to receive the fluxions, as being such parts that are voyd of flesh, hollow, and which are knit together by Membranes and Membranous Tendons, and are easily assaulted with pains; whereupon arise Inflammations, Watchings, Deliries, and Convulsions: and such like Wounds as these do easily degenerate into Ulcers of an ill and dangerous nature and quality as Galen writeth in his fourth Book of the *Method of Curing*, and sixth Chapter.

1. And they are yet more dangerous in an internal part; because that in that place the greater vessels and the Nerves are conteyned; where upon there are also the more notable and considerable hemorrhages and Convulsions easily excited.

2. Touching these same wounds Hippocrates likewise writeth after this manner: *Those Wounds (sayth he) that are inflicted in the Joynts, if the Nerves be altogether cut assun-*

*der, (that contained them) without doubt they will render them lame. But if there be any doubt, how and in what manner the Nerve may be affected, if indeed the Wound be straight from a sharp Weapon, that which is transverse is better then it. But if the Weapon that inflicted the Wound be heavy and blunt, there is then no danger. But we must here consider both the depth of the Wound, and other like signs of this nature. If any pus happen at the joynt, there is then a necessity that the Joynt should be rendered the harder. And if likewise the tumors shal withal persevere, there is then a necessity that the joynt should be rendered the harder. And if likewise the tumors shal withal Persevere, there is then a Necessity, that this place must be hard for a long time, and that the Ulcer being whol, the tumor or swelling stil remain. But in those where nothing is to be expected but the cutting off of the Nerve, there we may with the more confidence foretell a lameness to follow, and this more especially, if any of the inferior Nerves shal be loosened. But now whether or no the Nerve be to be cut off, may be discovered by these signs; if there flow forth under it a white pus that is thick, and of a long continuance, and that there arise pains and inflammations at the Joynt, about the very beginning: which are likewise wont to happen when the bone is to be cut out.*

4. The same Hippocrates (in the place already leadged) saith thus: *Those things that are cut off under in the Elbows, (especially with an inflammation) are at length brought unto a suppuration, and cutting, and burning.*

5. But these Wounds are made yet the more dangerous, if there happen withal loosening of the Joynt: for then the Joynt cannot be set and put back again into its place without endangering the life of the Patient, by reason of those pains that do perpetually accompany these kind of wounds. And therefore the Physician may do well to save his credit by heeding the Prognostick, lest that otherwise he be ill spoken of by the common sort of people. For otherwise, if he wil adventure to put back the Joynt into its former place, and that the Joynt when it is put back so continue, it bringeth death unto the sick person; and it hath been commonly seen, that upon a very smal Wound death hath followed. For when with such a Wound a luxation or looseness of the Joynt doth happen, the Nervous parts about the Joynts do suffer a distraction; upon which there are caused fierce and cruel pains, and fluxions: but if the Joynt be brought back unto its place, the same parts are again extended; and so of necessity there must happen inflammations and convulsions, which unavoidably are communicated unto the Brain: and withal from



from the afflux of the matter proceeding from so many distractions and extensions the heat is suffocated, and so there followeth a Gangrene, and Sphacelus. Wherefore if any such Wound be brought unto the Physician to Cure, let him acquaint the standers by with the danger of the Patients life, and let him likewise give them notice of the fever that will follow, and that a Convulsion will likewise happen in a very short time, if this bringing back of the Joynt be attempted, and accordingly effected. Touching which Hippocrates (in his *B. of the Joynts*, Text 74.) speaking of the Ankle-bone, thus writeth: But whosoever they be (saith he) that upon any Wound there inflicted have their Ankle-bones out of Joynt, and altogether sticking out from the Joynts of the Foot, they ought not to be returned and put back again into their places: but they are to be permitted so to continue: and if any Physician wil adventure to put them back, let him know for a certain, that if they so continue when they are set, the Patients are not like to live, and that their life is like to be but for a very few daies; for there be but few of them that live beyond the seventh day: for that which destroys them is the Convulsion. Add this likewise, that it often happeneth, that both the Ankle and the Foot are taken with the Gangrene. And we may be most certainly assured, that these things will thus come to pass. And of the Elbow, (Text 16.) he saith thus: The very same happeneth in the bones of the Elbow: for if these bones also (upon any Wound of the Hand-Wrist) be made to stick forth either toward the interior or the exterior part of the Hand, we are to know for a truth, that the persons who have these bones brought back and set in their former places, (if they so abide) they shall within a few daies die the same Death that we told you of before: And touching the Thigh-bone, (Text 77.) And if (saith he) the Thigh-bone be fallen forth by reason of any Wound inflicted upon the Knee, if it be again replaced, and so continue, it speedily bringeth a more violent Death, then in the cases aforesaid. And afterwards; And the very same is likewise to be said as touching the Joynts of the Hand-Wrist, and of the Arm. For whatsoever they be of these that upon a Wound are dislocated and loosened, and hereupon stick out, if they shall again be put back into their places, they certainly cause Death.

6. And yet notwithstanding the lesser Joynts if they be brought back, and replaced, they do not necessarily bring Death; but many of them are preserved: touching which Hippocrates (in his *B. of the Joynts*, Text. 78.) writeth thus: But now (saith he) if any upon a Wound have the Joynts of their Fingers, or of the Foot, or of the Hand,

loosened and sticking out, there being indeed no bone broken, but drawn away in the very Coherence, these if the Joynts be again replaced (and shall so continue) have indeed the danger of a Convulsion threatening them, and nigh at hand, unless they be rightly Cured. And Galen (in his *3. B. of Fractures*, Text 16.) saith: If the smal Joynts, to wit, such as are found about the Fingers, chance to be wounded, and dislocated, neither then also is the Cure altogether free from danger; for if these persons do notwithstanding escape and recover, most of them obtain this their recovery through the great diligence and pains taken in the Cure. And afterwards he addeth: It is yet nevertheless to be expected, that the Joynts about the Fingers that are brought back to their former places will again fall forth; for so for the most part it happeneth, if there follows but any the least Inflammation thereupon. Wherefore if there were no fear that the Physician would be accused and discredited by reason of the Ignorance and unskilfulness of the vulgar, there were not any one of these to be brought back unto their own former places. And which that the Phyitian may the better avoid, and may not hasten the Death of the Patient, he ought not so much as to undertake the replacing of the Joynt. But then if the Physician shall not order the Joynt to be brought back and set in its former place, he shall by the vulgar be accused of ignorance and unskilfulness, and as one that hath made the Patient Lame or maimed. Wherefore the Physician in this Case is to preserve his Credit and Reputation by the aforesaid Prognostick, and foretelling unto the standers by the danger of Death that may in thus doing accrue unto the sick party.

### The Cure.

The Cure of these wounds, if they be without any Luxation or loosening, is almost the same as was that before of the Nerves. To wit, the lips of the wound are indeed again to be drawn together, but yet not wholly, if the Wound be deeper then ordinary, that so there may be an open passage forth for the Humors that are easily gathered together. And seeing that the Joynts especially have in them but little heat, they are therefore in the best manner that may be to defend them from the injuries of the external Air. Wherefore not only those Unguents and Emplasters that are used in other Wounds (especially those of the Nerves) are to be imposed; but likewise those Cataplasms, of which mention was made above in the eighth Chapter. As,

Take Powder of Marsh-mallow Root, half an ounce; Betony, flowers of Camomile, and Melilote, of each one ounce; the meal of Linseed,

seed, and Fenugreek seed, of each one ounce and half; of Beans, one ounce; and make a Cataplasm.

The afflux of the Humors is likewise to be prevented; and therefore the whole body is to be evacuated with all diligence; and the Humors that flow are to be intercepted, and turned quite out of the Body.

It matters very much likewise, that the member be rightly Scituated and placed, that the pain and the afflux of Humors may be prevented, and the action of the member preserved.

If therefore the fore part of the Shoulder be wounded, then let a thick bolster be put underneath the wing thereof, and likewise wrapt up in something that may bear up the Arm, and drive up higher the top or head of the Shoulder. For the top or head of the Shoulder being drawn downward by its own proper weight causeth that the Wound is cured much the more slowly. If the Wound be inflicted upon the Joynt of the Elbow, the Arm is then neither altogether to be kept stretched forth straight, neither is it too much to be bended inward, but it is to be placed in a middle posture, resembling an obtuse Angle. Which Scituation of the part that it may be so preserved, and by the sick person whilest he sleepeth (or else through Incogitancy) not altered, it is to be kept in that posture either by fit and convenient bindings up, or else by wooden Instruments made fit for that purpose. The Hand-Wrist being wounded, or the Joynts of the Fingers, the Hand is to be kept half bended, and the Fingers not stretched forth, lest that a Cicatrice being brought over them the Hand should abide stiff, and be hurt by its contraction. If the joynt of the Thigh be wounded, let the sick person lie upon his back, and with fit little Pillows and bindings let the Hucklebone in the head thereof be contained and kept in its proper place; and until the Cicatrice be brought over it, the sick person must be commanded that he sometimes move and stir his Thigh this way and that way; lest that the Cicatrice being brought over it, there should happen a hurt of the motion by means of the said Cicatrice. The Knee when it is wounded must be stretched forth, and placed in a right and straight Figure, that so Lameness may be prevented.

But now if the Wound be with a Luxation or loosening of the Joynt, if the Joynt that is loosened be great, the putting of it back again into its place is to be omitted; and the sick person is to be told before hand of the Lameness and danger that would follow thereupon: and the fluxion is by all

manner of means to be turned away; and the pain to be mitigated; and the Member to be placed in such a posture as may seem most grateful and convenient unto the Patient, and such as may bring the least pain unto him; provided still, that the Member hang not down, lest that there should be an occasion for an afflux of the Humors. But the wound is to be Cured like as other Wounds; but yet nevertheless it is not to be bound up in the same manner as other wounds are. And great care must likewise be taken that it be not offended by the external cold of the Air. Cataplasms are likewise to be imposed, not upon the Wound it self, But upon the parts that lie neer unto it, lest that by any means the part should by the weight thereof be grieved and burthened. And in regard that fluxions are easily caused (in this case) unto these parts, and thereupon the Cure the longer ere it be perfected; therefore the Body is by often purgations, and likewise by sweats, to be purged and cleansed from all its vicious and superfluous Humors.

### Chap. 18. Of a Wound with a Contusion.

AND seeing likewise that the quality and Condition of the instrument wherewith the Wound is inflicted may cause a difference of the Wound we are therefore here not to pass this over in silence, without speaking something unto it. For some wounds are inflicted by sharp Instruments or weapons, and others by those that are obtuse and blunt; which doth not a little vary the Cure. And indeed the Cure of Wounds made with sharp Instruments may sufficiently appear by what hath hitherto been said: and as for what is peculiar unto Wounds that are inflicted by blunt Weapons, we will here in this Chapter declare it. Now that kind of Unity dissolved that obtuse and blunt Weapons cause in a soft part, is called a Contusion. And indeed it is properly termed a Contusion, when the superficies of the part (or the Skin) being whole and entire, those soft parts that lie under it are bruised, and as it were battered together; of which Contusion some mention hath likewise been made above, in the first Part, and sixteenth Chapter. And yet nevertheless, now and then, the part is not only bruised within, but it is also externally wounded in the superficies, where the Wound is joynted with a Contusion; and touching this Contusion it is that we intend here to treat; of which we shall notwithstanding to order our discourse, that

*A Wound with  
Luxation.*

*A Wound with  
a Contusion.*

half  
e, and  
of Lin-  
seed,

that what is to be done in every Contusion may manifestly appear.

### *The Causes.*

Now a Contusion is caused in Wounds, when the Weapon or Instrument wherewith the Wound is inflicted hath not only a power of cutting and making an incision, but likewise of bruising and battering the part upon which it lighteth; and this is done, when the Weapon or Instrument is blunt, or heavy; or when a man is thrown against something that is hard: in which manner also the soft part may be bruised without a Wound, or else with a Wound.

### *Signs Diagnostick.*

Wounds with a Contusion are known by the instrument with the which the wound was made, to wit, if it be blunt and heavy; and then in the next place from the pain, and the black and blew color of the part.

### *Prognosticks.*

1. A Wound with a Contusion is more dangerous, and more difficult to Cure, then that which is without a Contusion. For the bruised parts, and the blood that is poured forth, if they be not discuffed, they must of necessity be turned into Pus, or otherwise before this is done the Wound cannot be Cured.

2. And if the bruised part, and the blood poured forth of the broken Vessels begin to putrefie, it may excite and caule a Gangrene.

### *The Cure.*

In regard that no wound that hath any other affect that hindereth the Curing thereof Joyned with it can be cured until the said Affect be removed, and that the part itself be rightly disposed; it from hence easily appeareth, that our first care must be directed unto the cure of the Contusion. And when the Contusion or bruise is once taken away, the rest of the Cure is to be performed in the manner and form aforesaid.

But then, seeing that what is bruised cannot be restored again, and made entire as before, and that the Blood which is poured forth of the Vessels may stick in another place, (where it ought not to be) and so may be easily corrupted; therefore we ought first of all to endeavour, that both of them may be taken away: and that they may either be discuffed, or else converted into Pus. And because that there is evermore caused an afflux of the Humors unto the bruised part, by reason of the pain that attendeth the said Contusion; therefore, first of all, Uni-

versal Revulsions (and chiefly Venesection or opening of a Vein, if need so require) are to be administred. And then in the next place, that there may flow no more of the Humor unto the part affected, Defensives and Repellers are to be administred; touching which we have spoken above, in the 1 Part, Chap. 16. which ought to be such that they will no way admit of the afflux of the Humor; and withal that they may consume and dry up some part thereof.

And when there shall be no further cause to fear an afflux of Humors; then we are to do our endeavour that that which is bruised, and the Blood which being forth of the Vessels sticketh in the bruised part may speedily be turned into Pus: as Hippocrates teacheth us, in his *B. of Ulcers*: If (saith he) any of the flesh shall be battered and bruised by the Weapon, we are then to take care, that it be (as soon as may be) converted into Pus, for as it is less dangerous then an Inflammation; so there is also a necessity, that the flesh being battered and bruised by the Weapon should being converted into Pus waste and consume away, and then a new Flesh be bred instead thereof. Now what those Medicaments are that move and forward the Pus, we have elsewhere told you. But in the use of them, in regard that they are hot and moist, we ought to have a special care that we apply not those things that are over moist; since that by the use of such Medicaments, putridness and the corruption of the part may easily be excited; and therefore certain Discussives are to be added. *Ar,*

Take of Marsh-Mallow Root, one ounce; wild Cucumber, half an ounce; Organy, and tops of Dill, of each half a handfull; Fat dry Figs, six in number; boyl them all to a softness, and then pats them through a hair sieve: then add the powder of the flowers of Camomile, the meal of Lin-seed, and Fenugreek seed, of each half an ounce; Dragons Blood, three drams; Styrax liquid, Galbanum, and Mirrh, of each two drams; Saffron, one scruple; Oyl of St. Johns-wort, and Hogs Fat, of each a sufficient quantity; Mingle them, and make a Cataplasim. But now these Cataplasims are not to be imposed upon the Wound it self, but they are to be laid on round about, where the part is bruised. And this very thing Hippocrates teacheth us in his *B. of Ulcers*, where he thus writes; When it seemeth requisite that the Wound should be fortified and fenced with a Cataplasim, it ought to be brought back from the Wound, and laid upon the parts next unto it, that so the Pus may pass forth, and those things that are hard may be softened.

But



But upon the very Wound it self there is to be anoynted a Digestive made of *Resin Turpentine*, and the yelks of Eggs, or *Triapharmacum*, or the *Unguent Basilicon*, or the like, out of those things that we mentioned before; and then upon this Liniments dipt in the same Digestive are to be imposed.

The *Pus* being bred, the Wound is then to be cleansed with convenient Medicaments, and then to be filled up with flesh, and Consolidated.

But if that which is bruised be not changed into *Pus*, but that on the third, fourth, or fifth day a Tumor arise with a pain, and so increase from day to day, & that a beating pain be excited, so that the sick person cannot well bear the touch of that place, and that at length the flesh and flourishing colour in the part be extinguished, and the part tend unto a yellowishness, and that the pain and beating remit, and that there be present other signs and tokens of a Gangrene neer at hand; then the part is to be scarified, and the *Egyptiack Unguent* laid thereon; and the Cure is so to be instituted and ordered as we told you in the place alleadged (to wit, *Chap. 16. of the first part*) and as is wont to be done in case of a neer approaching Gangrene; touching which we have already spoken in the 2. Part, *Chap. 19.*

But if not the flesh alone, but likewise the Nerves, Tendons, and Ligaments be bruised: the Nerves indeed and the Tendons if they be bruised without any Contusion of the Skin, they are to be cherished with warm Oyl that hath in it a Discussive virtue, as for instance, the Oyl of *Rue*, *Orrace*, *Dill*, and sweet *Margoram*. But if withal the Skin be bruised, first of all, the white of an Egg mingled with the Oyl of *Roses* is to be laid on, to mitigate the pain. And then the pain being somewhat moderated, the part is to be cherished and fomented with Astringent Wine; and afterwards (according as *Galen* writeth that it was in frequent use with Wraстlers, who have oftentimes such bruises befalling them) a Caraplastm of *Bean-meal* and *Oxymel* is to be imposed. There is here likewise much commended the *Leaves* of the *Elm* boyled in Oyl, and applied; as likewise the *Aspes* of the *small shoots* of the *Vine* mingled with the *Fat* of a *Hen*, and *Vinegar*. And if some extraordinary Vehement pain be joyned together with the affect, then *Liquid Pitch*, with *Oxymel* and *Bean-meal* may be mingled, boyled, and laid on as hot as the Patient can well endure it. But if we see that there is cause of more drying, then we may mingle with the former the meal of the *Pulse Brum*, or the *Powder of the Orrace Root of Illyrium*; and the place ought to be anoynted with the

Oyl of *Camomile*, of *Dill*, of *Orrace*; and of *Rue*, with any one of them.

Or else let an Unguent be made of *Galbanum* and *Myrrh*. But all things whatsoever that are moist, and that easily bring in a Putridness, they are all of them to be avoided, and no use made of them. And there are also certain internal Medicaments to be administered; as the Root of *Birchwort*, *Gentian*, *Ellecampane*, *Centaury* the less, *Ammoniacum* with *Honey*.

But if after Contusion or Contorsion (by reason of the conflux of the thick Humors) there remain a hardness in the Nerve or Tendon, and that thereupon a Numness and stupidity be excited in the part, then Emollients and Digestives are to be laid on; such as are, the Root of *Marsh-mallows*, of white *Lillies*, *Bdellium*, *Ammoniacum*, *Galbanum*, and the great *Diachylon*.

And Lastly, If the Ligaments be bruised, and writhed out of their places, then there are to be laid on those Medicaments that have in them a virtue and faculty of heating, discussing, and strengthening the heat of the part; and such are the Oyl of *Mastick*, *Spikenard*, *Orrace*, *Spike*, the *Emplastrum Barbarum*, and the black *Emplaster*. Or,

Take Oyl of *Mastick*, *Spicknard*, *Spike*, of each one ounce; *Bdellium*, two drams; *Saffron*, one scruple; *Wax* as much as will suffice, and make an Unguent.

### Chap. 19. Of Wounds caused by the biting of Living Creatures.

Unto Wounds with a Contusion there belong likewise even those that are caused by the biting of Living Creatures, and Bullets shot from Guns; touching which our purpose is therefore to treat in special, and particularly. And in the first place, as concerning Wounds that are made by the biting of Living Creatures, we intend to treat of them here in this *Chap.* as they are void of Poyson: and of the biting of Poysonous Creatures our purpose is to speak after ward, in the 21. Chapter. For it sometimes so happeneth that a man may be bitten by a Dog, Ape, Horse, Afs, or other Creatures that are not poysonous or mad; or else one man may be bitten by another. But *Cornelius Celsus* (in his 5. B. and 27. Chap.) writeth, that all bitings whatsoever of wilde Beasts have in them a certain kinde of Poyson: which indeed cannot well be denied of wilde Creatures. For since that the very spittle of living Creatures hath in it a great power and virtue, (in so much that if there be any thing vicious in the Body it easily drinketh it up)

this spittle may together with the biting easily be conveyed into the Wound. And this must likewise be remembered, that these Animals when they bite, they are for the most part enraged. And then it being true, (as it is generally well known) that wrath and rage have in them a great power both of causing a commotion in the humors, as also of corrupting them; that viciousness of the humors is very easily communicated unto the spittle, and by it may as easily be imparted unto the Wound: and this happeneth much the rather, if so be the Man be Frantick. And if there were altogether nothing of virulency in the Wound that is inflicted by the biting of one of these living creatures; yet notwithstanding the very contusion itself (which rendereth all wounds whatsoever the more dangerous, and the more difficult to be cured maketh those wounds the more grievous. For since that the teeth of the said Animals are not so sharp as a sword, or some other kind of Weapon; while they wound; they do withal likewise bruise, and cause a Contusion in the part they fasten upon.

#### Prognosticks.

But now how dangerous these wounds also may be that are caused by one mans biting of another, *Guibelm. Fabricius* teacheth us by three Examples, and instances, that he giveth thus in his 2 *Century, Observat.* 84. and 85. The first whereof is of a certain Merchant who a midst his Cups by anothers biting was wounded in the very tip of the right forefinger; whose whole right hand upon the same biting became inflamed, and a *Gangrene* soon after began to follow, with Convulsions, an extreme burning feaver, a Syncope, and continual restlessness.

The second instance is of a Physician, who rashly and inconsiderately putting his finger into the mouth of a Phrantic woman, to the end he might feel her tongue, had it bitten by this mad woman; and upon this biting he became extremely afflicted with a vehement pain, not only in the said finger, but in the whole Arm also. The last example is of a man that being by another furious and enraged person sorely bitten even unto the first Articulation of his Thumb, he likewise was instantly taken with a vehement pain at that Arm throughout, and soon after there followed a feaver, and a Syncope.

*Matthias Glandorpius* (in *Specul. Observat. Chirurgic. Observ.* 49.) relateth the like History of a certain person, who by another mans teeth (the man being much enraged) was wounded in his thumb, about the first Joynt; from whence there arose a most extreme pain, an Inflammation of the

whol hand, a Continual fever, a restlessness of the body, frequent faintings and swoonings, and a very intense pain of the head.

And evermore the wounds are dangerous, both in themselves, (by reason of the contusion) as also because that the spittle of the furious and enraged Animals hath somewhat of malignity Joyned with it; and they are much the more dangerous, if any of the Nervous parts (such as are the fingers) shall chance to be bitten.

#### The Cure.

In regard that (as we have said) in every wound that is inflicted by the biting of any living Creature there is present a Contusion, and this sometimes greater, and sometimes less according as the teeth of those Creatures are more sharp (such as are the teeth of a Dog, Ape, and Squirrel) or else less sharp, (as those of a Man, Horse, Ass &c.) and that from this Contusion the pain is caused; therefore there ought a regard to be had both unto the Contusion and the pain.

And therefore in the first place, the blood is carefully to be pressed and squeezed forth of the wound; and opening of a vein, or purgation (according as need shall require) is to be instituted; and to prevent the greater afflux of the humors, and the Malady from being communicated unto the superiour parts some Defensive of Oxycrate, or some other the like, is to be imposed upon the superior part; but unto the Wound it self (for the asswaging of its pain, the promoting of the suppuration, and the keeping of the Wound open,) such a like Medicament as this that followeth is to be applied.

Take One Egge, butter half an ounce, Saffron one scruple, Oyl of Violets, and Roses of each two drams; and mingle them. or,

Take Marshmallow Roots, one ounce and half; the leaves of Mallows, flowers of Camomile, and Melilote, of each half a handfull; Wormwood two pugils; boyl them to a softness and let them be well bruised and mashed together: when they are well bruised add unto them the yelk of one Egge, oyl of Roses, and Camomil, of each as much wil suffice, and make a Cataplasme.

If there be any fear that there is some kind of virulency in the Wound, then we may add *Scordium*, as also Treacle; and therefore such an unguent is to be provided.

Take The Basilick Unguent, and fresh butter, of each half an ounce, Treacle one dram; oyl of Roses one ounce, the yelk of one Egg, and mingle them.

And moreover, that what is bruised may be wholly converted into Pus we are to use Honey of Roses, Rosin Turpentine, with the yelk of

an Egge, or the Basilick Unguent, or if any Malignity be feared, this that followeth.

Take Powder of Myrrh, Root of Round Aristolochy, Orrace of Florence, and Aloes, of each one dram; Angelica, half a dram; Treacle dissolved in the spirit of Wine, two drams, with hony of Roses make a Liniment.

And at length, the Wound being well wiped and cleaned, it is to be filled up with flesh, and so shut up with a cicatrice, as in other cases is wont to be done.

If a Gangrene be feared, as nigh at hand, then the Cure is so to be ordered, as we sayd before, touching the Gangrene.

Glandorpius his father ( in the case before alleadged ) besides general and internal remedies, was wont to administer these Topicks.

First of all, with this Unguent he anoynted the filaments; and then he imposed them hot upon the Wound, with the Citrine Emplaster. As,

Take Venice Turpentine often washed one ounce, the powder of Earthworms two scruples: Frankincense half a dram; the yelk of one Egge, and mingle them.

The hand even unto the wrist was anoynted with the Oyl of Roses.

The pain increasing, he applyed warm this following Cataplasme.

Take Scordium or Water Germander, the herb Sauce alone or Jack by the bedg, of each four pugills or smal handfults; Wormwood, the top of St. Johns wort, Sage, Marjoram, of each two pugills, Red Roses three pugills, flowers of Camomil and Melilote, of each one pugill; the pith of Rie bread three ounces: bran, one ounce; the meal of Lupines one ounce and half with a sufficient quantity of Wine make a Cataplasme; adding in the conclusion, oyl of Rue six drams; oyl of Roses with Earthworms, an ounce and half; the yelk of one Egge, Saffron one scruple; and mingle them.

The pain yet for all this little or nothing remitting, about the hand wrist, and the Elbow, he applyed this Defensive.

Take The Unguent of Ros's Champhorate a ( or with Camphyre and the Santa'ine Oyl, or the oyl of Saunders, of each half an ounce; oyl of Roses with the Juice of Night-shade, three drams; Bole Armenick two drams, powder of red Roses one dram; Rose vinegar as much as will suffice, and mingle them.

The pain somewhat abating, there was then discovered a Nerve, or rather a black Tendon; and upon this he strewed the following powder.

Take Roots of round Aristolochy, Sow fennel, Orrace of each one scruple; Harts horn burnt, prepared powder of Earthworms, and Frankincense, of each half a scruple, mingle

them and make a very fine powder.

Upon which he laid on the filaments after he had dipt them in the Diapompholyx Emplaster; and covered them with the Emplaster Diapalmu & so the fear that was conceived of the necessity of the cutting off of the Thumb, was taken away: and a great part of the Tendon cut forth; and the first little bone, being become together rotten was drawn forth with the Nayl. But because that the fingers ( by reason of their being continually bound up, ) as also the thumb, were benumbed and wanted their motion, by fomentations, Bathes, and Liniments, the fingers recovered their motion again; and the thumb albeit that it remained immoveable, yet nevertheless it had a new Nayl instead of the former.

## Chap. 20. Of the Wounds by Gun-shot.

Unto Wounds with contusions we may likewise add those that are inflicted by Gunshot. Whereat the very first, and before we proceed any further, this question cometh to be discussed; to wit,

*Whether wounds that are inflicted by Gunshot have any Malignity in them; and whether they receive any burning heat, ( causing an Inflammation, and putrefaction of the humors ) from the powder, or the Bullet?*

Three opinions touching wounds by Gun-shot: And here in this Controversy, we find that Authors are altogether divided into three Ranks, and opinions. The first determine, that the Wounds inflicted by bullets from Guns are poysonous. Others deny indeed that they have any thing of poyson in them; yet they have nevertheless ( as they say ) an *Empyreuma*, and burning. But thirdly, and lastly, others there are that wil not admit of either of these; but they assert, that al that wherein these Wounds differ from those that are inflicted by a sharp weapon, is from the contusion and tearing of those parts the bullet passeth thorow. All which opinions we wil now examine in order.

The first opinion. And first of al, the opinion of them that assert these wounds to be poysonous is indeed very Ancient; and therefore soon after the invention of Guns, according to this opinion, there was likewise a Method

Ddd 2 propounded



propounded and practised, for the curing of Wounds inflicted by Gunshot. For *John de vigo* (in the second part of his *Pract. Chirurg. Book 1. and the Chapter of a poysonous wound*) writeth in this manner: If the Wound shal be caused by the Instrument now much used, and called *la Bombarda*, or (as we term it) the Gun; then there ought to be made a cauterization, with the oyl of *Elder*, or the oyl of *Linseed* only. And *Paræus* writeth ( in his tenth Book of *Chirurgery, Apologism. 1.* ) that it was a thing much in use even in his time, to burn into such wounds with the oyl of *Elder* applyed very hot, and that had mingled with it a little Treacle; and that he himself also at the first followed this way and method of curing; until accidentally ( by a certain chance ) there was another way taught; touching which, see the place alleadged.

The reasons by which the first opinion is proved.

But those that follow this opinion prove this poysonousness ( in the general ) from the diseases and symptoms that usually happen thereupon; such as are, the corruption of the parts, and the Gangrene, those ulcers resembling the Nature of the Tumor *Herpes*, the trembling of the Heart, Malignant fevers, the lips of the Wound leaden coloured, or black; and then next of all they prove it from the course that is taken in the Cure; because that it is found by experience, that *Alexipharmaca* ( or Counterpoysons ) have brought much benefit and help unto the Patient; and because that these Wounds are to be kept open a longtime, after the manner of other poysoned Wounds. And lastly, some there are that pretend this likewise, that it hath been found, that all those have perished that in some certain battles have been wounded by such bullets; or if any have escaped, that it was very hardly; and that they were preserved by some extraordinary pains and labour; although that the Wounds did not seem so great and dangerous, whatever were the diligence and care of the Chirurgeons, and though it were never so little.

But others of this opinion will have this poysonousness to proceed from the Gunpowder, by the force and violence whereof the bullets are driven forth; others from the matter and metal of which the bullets are made; others from the poyson wherewith these bullets are poysoned. For this powder consisteth of *Brimstone*, *Nitre*, and *Coals*: of which ( they say ) the two former are hot in themselves; and when they are fired, they then become extremely hot; and if they take flame, then do they at length acquire a poysonous quality, as these would perswade us.

And this they think to be sufficiently manifest even by this also, because that those who make this powder shut both their mouth and their Nofethrills, that so they may not be hurt by the poysonous exhalations of this powder. But they who derive this poysonousness from the Metal, these tell us that all Metals in general are poysonous, and envenom unto our bodies: others although they say not that these bullets are in themselves poysonous; yet nevertheless they take upon them to prove that these bullets may be poysoned; and that this was much used by divers Nations, they abundantly prove out of several Authors; As, *Theophrastus*, in his ninth Book of *Plants*; Chap. 15. *Dioscorides* in his sixth Book, and Chap. 20. *Pliny*, in his twelfth Book, and Chap. 53. *Paulus Aegineta* in his sixth Book and Chap. 88. and other modern Writers. And some there are who here ( for to prove this their opinion ) betake themselves to the likeness and resemblance of the lightening and blow of the Gun; and as it is most certain that oftentimes in Lightening there is a certain poysonous quality and power ( as is sufficiently testified by the stench, and the wonderful power it hath of blasting and destroying both man and beast, and that in a moment; as also the other malignant Effects thereof sufficiently witness the truth hereof ) so they conceive that there is something like unto it in the flash of the powder and the noyse or report of the Gun.

The Second opinion.

Secondly, Many there have been, and still are, who affirm that an *Empyreuma* or Combustion of the parts is joyned with these Wounds. And hereupon it is, that Chirurgeons commonly carry about with them so many Medicaments, which our Chirurgeons term *Pulver lehung*, ( that is, extinguishers of the Gunpowder, or the *Empyreuma* when the parts are inflamed and burnt in these wounds by Gunshot ) because, to wit, that they are perswaded, that in such wounds there is an *Empyreuma*, which is first of all to be extinguished. And this they endeavor

The Reasons for proove of the second opinion.

to prove by these Reasons. First of all, because those bullets when they are cast forth may be inflamed by the Gunpowder, and so may contract an *Empyreuma*. Secondly, from the motion it self of the bullet, which in regard that it is most quick and swift, they conclude that the bullet is thereby made hot; the same that even *Aristotle* also hath taught us; who ( in his second Book de *Celo* Chap. 7. text 42. and in his first Book of *Meteors*, text, 3. ) writeth, that by a vehement motion the Iron is made hot,

hot, and the Arrow heads melted, and wood and stones set on fire: which we are likewise taught by Experience it self, it being very well known, that by the hard and vehement rubbing of wood one piece against another the Country people do sometimes raise a fire; and that the Axletrees of Mil-wheels, unless they be often moistened with fat, are very apt to be inflamed and set on fire. And thirdly also, the very same is by experience confirmed in these bullets; since that oftentimes it hath been found, that (in villages) the straw or thatched houses have by these bullets been set on fire; and that whole houses have been burnt down thereby. Fourthly, they say also that other things that are wont to happen in combustions or burnings, do appear likewise in those Wounds; to wit, that the wound it self becometh black, that there flow forth from thence sharp, stinking and black Ichores (or thin Excrements) and that the inflammation (as it is wont to be in all combustions or burnings) is augmented even untill the Ninth day, and then after this diminished.

*The third Opinion.*

*Reasons for the defence thereof.*

*1. That there doth not proceed any poyson from the Gun-powder.*

And thirdly, those that deny that there is present in these Wounds any poyson or burning they urge these Reasons for their opinion. And indeed in the first place, they in this manner fight, and oppose themselves against this poysoning of the Wounds. First of all (say they) if there be any poyson in such Wounds as are inflicted by gun-shot, it is brought in and caused either from the Gun-powder, or else from the bullet. That it proceedeth not from the Gun-powder, appeareth from hence, that those things of which it is compounded are not poysonous: for it is made of Brimstone, Nitre and Coals: of all which not one of them is poysonous. For both the Sulphur, and the Nitre, are made use of in the stead of internal Medicaments, both by the Ancient, and by the Modern Physicians also; and this is a thing so generally well known, that it needeth not any proof at all. And much less have these Coals any thing of poyson in them. And although that this powder shall be kindled, yet notwithstanding it cannot from thence acquire any poysonousness, since that fire doth rather consume then produce venomosity or poysonousness. And that this powder is not poysonous, there are many Soldiers that have sufficiently proved; who have made great use of it (together with vinegar) for the Curing of the Plague: and they use to burn it in houses, in time of a great plague to drive it away, and to preserve themselves

from the contagion thereof. Yea, the affect it self, and experience do sufficiently prove this, which testify, that very many who have been wounded by these bullets have yet notwithstanding suffered no symptom at all, that in the least might betoken any thing of poyson.

*2. Not from the Bullet.*

Neither also can this poyson come from the leaden bullet. For it is most manifest, that the bullet of lead (especially if it be whole) cannot possibly bring any poyson along with it; and it appeareth even from this, that many carry about in their bodies such bullets that have been shot into them, sometimes for the space of many years, and this without any hurt or damage at all. Yea some have swallowed bullets of lead, and cast them forth again by the belly, without any the least hurt. And it is a thing very well known, that Lead, and such various Medicaments as have from it been made, have been by the Ancients and our selves very successfully administered unto the External parts, for the curing of old Ulcers. But now that such bullets may indeed be poysoned (as we shall afterwards shew you) this they deny not: but this happeneth not unto all such wounds; as we shall anon further shew you.

*That there is present no burning, how proved.*

And that there is also no burning present in the Wound they thus prove it. For first of all if these Wounds should bring in any burning at all, then the bullets themselves ought to be fired; and thereupon melted; whereas notwithstanding, we see that the bullets are taken whole out of Wounds, and appear to have suffered no such thing. Secondly, this burning should rather be perceived in those things that are more combustible; and this burning should first of all appear especially in the Clothes of those that are in this manner wounded: whereas notwithstanding, there is not the least appearance or shew of any burning in these Garments, whether Linen or Woollen: yea and those who endeavor to defend ships and houses from the violence and blows of these bullets, what do they? Do they not hang before them Sacks filled full of Wooll or hurds? Which were yet never known to be set on fire by these bullets, no not by the greatest of them. Neither may any one here object, and say that there is great difference between the parts of mans body, and Garments, and such like things. For such things as these (by reason of the widness of their passages,) may be pierced thorow by this most thin Exhalation, without touching or hurting the substance: which yet may hurt a mans

a mans Body, by reason of the closeness and compactedness thereof: and that the same happeneth here which is wont in the lightning that oftentimes melleth the Sword, without hurting the Scabbard.

But there is here a very vast difference between the Lightning and a Bullet. For the whole Action of the Lightning is by a most powerful Spirit; and by a most subtile substance that pierceth through all things whatsoever: but it is not yet proved, that there is Joyned with the Leaden Bullet any such spirit; but here the whole Action is of the Bullet it self, which neither burneth things that are thin and permeable, nor yet Wood, (and other things of a thick substance) upon which it not only glanceth, but directly striketh against. Thirdly, since that there is hardly any thing to be named that is more inflammable then the Gun-powder; if these bullets should burn the Body of Man, it should much more kindle and set on Fire the Gun-powder; which yet nevertheless it doth not do; experience it self testifying, and teaching us, that although a Vessel that is full of such Gun-powder shall be shot through by such a bullet, yet that the said Gun-powder is not hereby kindled and set on Fire. But if at any time it so chance that by a Bullet sent out of a Gun the Gun-powder be fired, this happeneth because that either the flame it self penetrateth unto the Powder; or else that the Bullet striking against Iron, or some Stone, is kindled by the sparks of Fire, just as we see it to be in the striking together of the Steel and the Flint-stone. Fourthly, if instead of the Leaden bullet, either Paper pellets or pellets of Hurds be ram'd into the Gun, and then shot forth, there will not appear any the least tokens of any burning in them (caused either by the Gun-powder, or else from the vehemency of motion;) but only, that sometimes they are sullied by the Gun-powder, and made a little black; and they are oftentimes drawn forth of the very Wounds as whole and entire as they went in. Fifthly, Those who are thus wounded do not feel any heat or burning from these bullets, but only a pain from the bruising and tearing of the flesh. Sixthly, That those bullets are not made hot either by the flame of the Gun-powder, or else by the swiftness of their motion, we are sufficiently assured of it even by this, that a bullet made of Wax, and shot forth of a Gun, doth not at all melt; but that it even pierceth through a two inch board, or any piece of Wood two Fingers thick. And from this alone it may appear very manifest that those bullets, whatsoever it be that they do, it is not by the power and virtue of any Fire that they have in them; but what they

effect, is meerly by their force, and violence.

But now that I may a little open unto you my thoughts, and give my Judgment touching this Controversie; I conceive the

*The Decision of  
all the opinions.*

third Opinion (well weighing the Reasons that are brought for it) to be the most agreeable to truth. But those Arguments that are brought for the two former Opinions may easily be answered. For the first of the three, who defend, that those Wounds are poysonous, they do not prove it by this, that first of all grievous and dangerous Symptoms do infest those that are wounded in this manner. For all those Symptoms may possibly proceed from a Contusion if it be not rightly Cured, or if it be overgreat, and that there be from hence a putridness excited. For when that bullet doth with the greatest violence that may be penetrate through those parts against which it hitteth, it dasheth together all whatsoever lieth in its way, bruisseth, and teareth it; by which said violence not only the Capillary Veins, and the Arteries and Nerves, (that be every where up and down dispersed throughout the flesh) are rent and torn; but the greater Vessels likewise are battered and broken; insomuch that the Natural flux of the Blood and the Spirits is hereby hindered; whereupon the bruised parts being deprived of their Natural and Vital heat are easily corrupted, and soon putrifie. Neither can it truly be said, that the trembling of the Heart, and the like Symptoms do happen unto all that are thus wounded. But as for what they say in the second place, that *Alexipharmaca* (or Counter-poysons) have been sometimes found very good and commodious for the person thus wounded; we answer, that this is not true of all Wounds made by Gun-shot; but of those only, when by the Contusion, and the great putridness following thereupon, and the neer approaching of a Gangrene, the Heart is hurt by the putrid Vapors, ascending from the Wound through the Arteries; and thereupon it is by *Alexipharmick* and Cordial Medicaments to be defended from them, and withal strengthened. But, that those Wounds are a long time to be kept open, this is not therefore to be done, that so the poyson may be evacuated; but that the Pus that is continually generated from the bruised parts may be emptied forth, which is done too slowly, in regard that in such Wounds as these there is very much of that that is bruised. And Lastly, for what they alleadg, that in many battles the most of those that have been wounded, either they have Died, or else they have been preserved with very great pains and much difficulty;

this



this did not therefore happen, because that the Wounds inflicted by Gun-shot were poysonous; (since that in very many other battles no such thing hath been observed,) but it happened from hence, to wit, either by reason of the bad and unhealthful Constitution of the Air; or else from the vicious and unsound Constitution of the Body, and the great store of depraved Humors in these wounded persons; such as is most commonly wont to be in those that follow the Camp.

But now in special, and particularly, the poysonousness of those Wounds cannot be proved to arise either from the Gun-powder, or from the bullet. For (as we also told you before) neither is the Sulphur, nor the Nitre, nor yet the Coals, all or any one of them poysonous; and therefore surely of these there can nothing be compounded that is poysonous. And that Sulphur and Nitre may be safely administr'd, appeareth out of *Dioscorides* his 5. B. and 83. Ch. and out of *Hippocrates*, in his B. of the Nature of Women; and others, both Ancient and Modern. Now the kindling and inflaming of these, and the Fire following thereupon, would rather dissipate this poyson (if any such were present) then any waies produce it. Neither do those that make this powder stop their Mouths and Nofethrils, by reason of any poysonous quality that it hath, but to keep out the powder, that is otherwise very troublesom when it gets into the Mouth of Nofethrils: neither yet do all that make powder stop the aforesaid places, although some do for the reason I have given you.

And moreover, much less can this poysonousness be produced from the Lead. For although it being long detained in the Body, and there resolved, like unto other Metals, (if it contract any rustiness) it may possibly do hurt: but yet nevertheless, that in this its moment any passage through the Body there should be any poyson imprinted by it upon the Body, this can no way be. And (as we told you above) these bullets have sometimes been known to lie in the Body for many yeers together, without any inconvenience or hurt: yea and moreover, from lead there are many very useful Medicaments to be made, for External Ulcers.

But this we easily (and of our own accord) yield unto, and readily grant them; that those Bullets, as also all other Weapons, may be infected with poyson. For although the Lead be thick enough, yet nevertheless, since that Iron that is yet far more solid may be infected with Poyson, why may not Lead also be poysoned? Now that Iron may be infected with poyson, there is no doubt at

all to be made; the truth whereof is sufficiently testified by the Histories (both Ancient and Modern) of those Nations that as yet use Arrows. And this we are assured of by *Dioscorides* (in his sixth Book, and 21. Chap.) and by *Paulus Aegineta*, (in his sixth B. and 88. Chap.) and by *Virgil*, (in the tenth B. of his *Aeneids*, and elsewhere) as also by *Ovid* in his 3. B. de Tristibus. And of this there is no question at all to be made. But here lieth the question, whether or no every Wound inflicted by the bullet out of a Gun be poysoned; and this I deny. And therefore, like as we cannot truly conclude, that because that Wound which is inflicted by a poysoned Sword is poysoned, therefore that all Wounds inflicted by the Sword are mortal: so also we can no more rightly and truly conclude thus, if there be some certain Wounds made by Gun shot, that are poysoned, therefore they are all such. Neither is there any reason, why any one (with *Paræus* in his 10. B. Apologism 2.) should think, that there is in Fire power enough (and more then enough) to dissipate all the strength of the poyson, if any should chance to be poured upon the bullet. For (as we shall afterwards prove) and as even *Paræus* himself granteth, those bullets out of Guns can by no means get any such great heat, as that thereby (like as by Fire) the poyson (if any such there be present) may be dissipated and consumed.

But now, in what manner these bullets may be infected, whether only by being anoynted, (as *Paræus* is of opinion) or else by an infusion of the very poysoned substance it self (which he denieth) of this I dispute not. And yet nevertheless, I do not think it a thing altogether impossible, that some poysoned substance (if not vegetable, yet Mineral) may be given, which by infusion may be mingled together with the Lead, and there remain. But I shall not contend at all in the maintaining of this my Opinion, neither shall I take much pains to discover whether there be any such, yea, or no.

And whereas they would by the instance they give of the Lightning prove their opinion; we answer that there is not so great a resemblance between the Lightning and the Report or blow of a Gun, as they think. For indeed that there is oftentimes in Lightning a certain kinde of poysonousness, it cannot be denied. But in the blow or Noise of a Gun there is no such thing, as we have before already proved out of its Composition. Neither doth any flame from the kindled powder penetrate unto the Wound it self; but whatsoever the bullet doth it performeth

by its violence and motion, after the manner of other things that are cast forth with violence, as Arrows, and Stones cast forth of slings. But now, for what reason things thus cast forth by a violent and vehement motion should work such effects, here is no fit place for me to dispute. And if there be any resemblance at all between the Lightning and Guns, this likeness is rather in the Fire from the Gun-powder being kindled and cast forth, then in the Leaden bullets.

And Lastly, Their telling of us that in some certain battles such as have been wounded by these kind of Bullets they have most of them died of their Wounds, neither doth this prove the poysonousness of these Wounds. For neither doth this happen in all battles, (as we likewise told you before) but very many have been Cured and recovered of the most dangerous and desperate Wounds. And this if it shall sometimes happen, it is to be ascribed either unto the Malice of the enemy, infecting these bullets with poyson, or else to the ill disposition of the wounded bodies, or lastly, even unto the vicious Air it self. For it is a thing well known, that the Bodies of Souldiers (by reason of that ill course of Dyet they keep) are very much disposed unto the Plague, and other Diseases: in whom Wounds, if any happen unto them, may easily prove Mortal; like as the Wounds of Hydropick and other Cacochymical persons are wont to be very dangerous. And there is likewise no doubt to be made, but that the Air becoming impure and corrupt, both by the unseasonableness of the weather, the Crazy Constitution of the yeer, and the impurities, and nastiness that alwaies followeth the Camp, may cause the wounds to be the more dangerous. And evermore in such like Wounds the ill disposition of the Bodies, and the Vicious Constitution of the Air, bring more danger unto the party, then in other Wounds inflicted and made without any bullet. For in these latter there is no such great need of suppuration; but in those other Wounds that are not made without much bruising, there is altogether great need of Suppuration, and Suppurating Medicaments. Neither without these can such Wounds by bruising be any waies Cured; which said wounds in Bodies that are ill disposed do very easily get a putridness; which the feavers that follow, and the bad Symptoms are easily able to excite. Neither indeed is this any new kind of wound. For although that the invention of Guns, and this casting forth of the Leaden bullets be new; yet the manner of the wound is not at all new, (as being well known both unto Hippocrates and Galen) to wit, Contusion, or bruising.

And yet nevertheless our expert Chirurgeons do not rest themselves in the alone use of Suppuratives, but if there be any fear of a putridness nigh at hand, which may very easily produce a Gangrene, they then use the *Egyptiack Unguent*, and other Medicaments that may prevent and keep off the Gangrene; as we shall anon have occasion to speak further hereof, when we come to shew you the Cure; which yet notwithstanding ought to be ordered and contrived, that they may not altogether hinder the suppuration; since that no wound made with Contusion or bruising can possibly be healed, unless that which is bruised be converted into Pus.

Now as for that other Opinion of those who assert that there is a burning or *Empyreuma* conjoined with these wounds, neither have these any firm Reasons to ground their opinion upon. For that our German Physicians and Chirurgeons call these their Medicaments that are in these wounds at the very first administred, *Pulver le schung*, that is, Extinguishers of the *Empyreuma* or burning that happeneth from the Gun-powder; this is grounded upon a false supposition; for they who at first gave this appellation unto these Medicaments did falsely beleve, that there was an *Empyreuma* joyned with these wounds, and that this *Empyreuma* or burning was first of all to be extinguished. But now all those Medicaments perform nothing else, but that they either turn into Pus all that in the wound that is bruised, and to hinder and prevent putridness; or else they keep off, and turn away the inflammation, if there be any nigh at hand. Now that these suppurating Medicaments differ somewhat from those suppurations that are wont to be administred in other Wounds and Ulcers, there is no wonder in this: For above, (in the first Part, and 16. Chap. and likewise a little before, in the 18 Chap. of this fourth Part, touching a Wound with Contusion) we told you that in Contusions those hot and moist suppuratives have no place at all, but that from the use of them a putridness and oftentimes also a Gangrene is thereupon excited; and that therefore those Medicaments that were more drying, and such as resist putridness (provided, that in the mean time they likewise strengthen Nature in her generating of Pus) are necessarily required.

But now the Reasons they alledge for this their Opinion have in them very little of solidity. For first, whereas they assert that those bullets are as it were fired by the Gun-powder when it is kindled, this is false; and above by those Arguments we brought for the third Opinion, it was sufficiently proved, that

that those bullets are no waies heated and set on Fire by the said Gun-powder. And then furthermore, whereas they think that those bullets are made hot by their violent and swift motion, (and to prove this, they Cite *Aristotle*, as a witness on their side; for *Aristotle* indeed, in the place before alleadged, writeth, that motion is wont to set on Fire both Wood and Stones, and even Iron it self; and this he confirmeth by experience;) unto this we thus reply; that this may be done, there is a necessity that there be two hard and solid bodies long rubbed hard one against the other. But that Lead, or any other Metal, should by their motion through the Air become very hot, and that it should hereby be set on Fire, this was never yet taught us by experience. For if this were done, then Arrows also (that oftentimes are pointed with Iron or Brasse points, we call them Arrow Heads) being shot through the Air ought to become hot, and likewise to be fired. But now, as for what they say in the third place, to wit, that by these bullets thatched Cottages and other Houses have been set on Fire; this we grant to be true, if any flame (which together with the bullet is sent forth of the Gun) touch the House; or if there be any kinde of Fewel, or Combustible matter fit to feed the Fire, tied and fastened unto the bullet, as Incendiaries are wont to do. But if it be from that flame, or from fiery matter: and if the bullet only touch the straw, neither it, as neither Wool, nor Hurds, nor Gun-powder it self can be kindled; as before we told you in the Arguments that were brought for the third Opinion.

Neither is there any place here for that distinction of *Quercetan*, (which he hath in his *Scolopetarius* or Gunner) where he writeth that if that bullet be sent forth of the Gun at a distance, and a great way off, or else that it hit any part that is covered with Clothes, that then the Wound is without an *Empyreuma* or burning: but if the Wound be inflicted by such a bullet out of a Gun nigh at hand, or if it light upon a part of the Body that is naked and bare, that then the Wound may have joynd with it a heat and burning. For although that the flame from the kindled Gun-powder, breaking forth of the Gun, may neer at hand hurt the beard, and the Hairs of the Head, or likewise the Clothes; yet notwithstanding it is altogether a thing incredible, that the flame by that smal Wound of the Skin (through which the bullet penetrateth into the Body) should together with the bullet break in, and pierce so far into the Body. Neither doth there appear any difference between Wounds made by bullets,

whether a far off, or nigh at hand, but only this, that the Contusion is greater and more grievous that is caused by a bullet shot forth nigh at hand (in regard that it strikes with a greater violence) then the Contusion or bruise that cometh from that bullet that is shot at a great distance, and striketh more weakly. But Fourthly, As for what concerneth the Symptoms that appear in these Wounds; we answer, that all these do not proceed from any *Empyreuma* or burning, but from the Contusion; and they appear also in those other Wounds in which there is present no *Empyreuma*, nor burning, at all. And that at length about the ninth day the wound appeareth to be in a better condition, and what is corrupted begins to be separated; this happeneth not only in Wounds with burnings, and where there is an Eschar; but also in Contusions; since that a certain space of time there ought to be, wherein that which is battered and bruised and corrupted be turned and converted into Pus. Neither is that to be accounted for any true Eschar, that these men take for an Eschar in these kinds of Wounds; being that it is no waies hard, as an Eschar is; but flesh greatly bruised, which forthwith dieth; whereupon it likewise becometh black; and yet nevertheless, it is sometimes likewise discoloured, and made black by the heat of that Gun-powder with which the bullet it foul'd and sullied.

By al which it may sufficiently appear, what the Nature of these Wounds is; to wit, that it is only with some notable Contusion and tearing of those parts through which the bullet passeth. And although the part may close at Hand, and at a neer distance, be burnt by the flame of the inflamed Gun-powder, yet this appertaineth not unto the Wound it self; neither is the part burnt within. And we likewise grant that these bullets may possibly be infected by poyson; but this is no way essential unto these wounds; but a thing meerly accidental: like as, if any one shal be wounded by a poysoned Sword, this poysoning is no way of the essence of the Wound.

But that which hath deceived all those of this Opinion, is this, that other Symptoms happen unto these wounds, and that these wounds require another kind of Cure then those Wounds that are caused by Arrows. But these ought better to have considered, that there is a very great difference between those wounds. For Arrows are sharp, and they make a wound by Cutting; but those bullets are round and blunt, and therefore they hurt by breaking and bruising; upon which there easily follow a Corruption

The Nature of  
Wounds inflicted  
by Gun-shot.



of the bruised part, and very ill Symptoms.

### *The Differences.*

The Differences of these Wounds are taken. 1. From the greatness of the Wound; to wit, that some are great, some but small, some superficial, others more deep. 2. From the part affected; that sometimes only the Flesh and the Skin are wounded, but sometimes the Nerves and Tendons, Yea and the greater Vessels are broken, Yea and the very bones likewise are broken and shattered. 3. Another Difference is from the manner, that a Man is sometimes wounded only in one part; and sometimes the whole Body, or some one part thereof is wholly shot through: and sometimes also the bullet passeth quite through the part, and then at other times it sticketh yet still in the part: and sometimes only the bullet penetrateth into the Body; but sometimes again it carrieth along with it into the Body some of the weapon, or something else through which it passeth.

### *Signs Diagnostick.*

There is no need that I declare unto you those signs by which these wounds in general are known; seeing it will be sufficient to know that the party was wounded with a bullet shot forth of a Gun. But now what parts they are that are Wounded, this is to be discovered either by putting in the Probe; or else it may be known from the very Situation of the parts, with the which Anatomy will acquaint us. If the Nervous parts chance to be hurt, this the pain will manifest. But whether or no the wound be poisoned, this is known by the Symptoms following thereupon; to wit, if the colour of the flesh be more Wan and Lead-coloured then it was wont to be; if there likewise happen an extraordinary heaviness and sluggishness of the whole Body; if there be a trembling and palpitation of the heart, Faintings and Swoonings, and other such like Symptoms as these, and that there be no other Cause appearing from which such Symptoms might proceed. Which notwithstanding even the very consideration of the bullet (if it be there present) will sufficiently teach us. For if the bullet differ from all the other things in colour, or in any thing else, there is then great cause to suspect its being infected with poyson: and this is confirmed, if the bullet being put into a hot fire, we take good notice whether or no there exhale from it any thing that is black and stinking, or else whether the bullet itself being again cooled, there stick any thing unto the outside of it, and change its colour

It is known that such a Wound as this will degenerate and turn into a Gangrene, by the slow Maturation and generating of the Pus; by the extinguishment of the fresh and flourishing colour of the part, and its inclining unto a yellow, and Lead-colour; by the remitting of the pain without any apparent cause, and by the ceasing of the beating, and by the stupidity of the part, and by other like signs of the Gangrene, such as we have above shewn unto you, in the *second Part*, and 19. *Chapter*.

### *Prognosticks.*

But now, that we may not here again repeat those Prognosticks which they have in common with other Wounds, and which we have declared unto you above, in the *third Chapter*.

1. All those Wounds, since that they have Joyned with them an extraordinary and notable Contusion, they are therefore far more dangerous then those Wounds that are inflicted with a Sword or Darr. And therefore (as we may observe) of these Wounds made with the Sword, (as to instance, the Wounds inflicted on the Belly, Guts, and Bladder) many have been recovered; but it is a very rare thing for any to be cured of those Wounds that are inflicted by Gun-shot.

2. But although that those Wounds be far more dangerous then the wounds that are inflicted by the Sword; yet notwithstanding we must not rashly forsake the Patient, and give the Cure over; seeing that even here Nature is likewise wont oftentimes to work miracles as it were; and it hath been observed that very many of those that seemd to have been neer unto the Grave, have yet nevertheless recovered, and done well: and Histories to this purpose we very frequently meet withal, and they are well known: and *Guilhelmus Fabricius* giveth us likewise a very notable Observation, and a singular way of Curing these kinde of Wounds; as we may finde it in the *third B.* of his *Observations*.

3. If there be many (and those the more noble parts) that are wounded, bruised, and torn; and especially if withal the Bones be any of them broken and impaired, the Wound is then so much the more dangerous, and the more difficult to Cure.

4. And hitherto are to be referred those parts that can easily draw the principal parts into a consent with them; such as are the Joynts, as also the great Vessels wounded; from which there arise not only Vapors, but likewise vitious and corrupt Humors; which being received and communicated unto the Heart do easily excite both Feavers, and Faintings,

faintings; and the *Syncope*, yea and also the Fluxes *Diarrhaea*. And this *Ambrose Parry* observed in Count *Mmsfield*, who (as this Author relateth in his *tenth B. and 12. Chap.* and in his *16. B. and 49. Chap.*) having received a Wound in his left Arm, out of it Nature sent forth by the Belly a Purulent and stinking *Sanies* or thin Excrement. Yea and in other Wounds also it sometimes happeneth, that both Blood and *Sanies* is emptied forth by siege, (that is, by the Belly,) and likewise by the Bladder; like as *Ambrose Parry* hath an instance and example of this thing, in the *alleadged 16. B. and 49. Chapter*. As I have also given you the like example in the *second B. of our Practise, Part 2. Chap. 16. Quest. 5.* where I likewise treated of the way by which this may be done.

5. If such Wounds befall a *Cacochymical* Body, they are much more dangerous then if they happen unto a sound Body: from whence it is, that in Armies (in which *Epidemical* Diseases are wont to reign and rage) most of those that are thus wounded die of their Wounds. Yea and otherwise also in Camps those Wounds are dangerous, and become more difficult to Cure; in regard that the Air is for the most part infected with the *Nastiness* and *Defilements* of the Camp; and that Souldiers (for want of better food, and fit wholesom drink) for the most part use a very bad and corrupt Course of Diet; eating any meats whatsoever that come next to hand, and drinking filthy and corrupt waters.

6. Those wounds wherein the bones are broken are far more dangerous, and difficult to Cure, then those without this *Fracture* of the bones.

7. These kind of wounds if they be inflicted by a poisoned bullet, they are indeed then greatly dangerous, and for the most part Mortal, and more especially if they penetrate unto the interior parts. And yet oftentimes notwithstanding those wounds that are but smal to see to do yet kill and destroy the Patient.

### The Cure.

These kind of Wounds have especially three indications. The First is this, the drawing forth of the bullet, if it as yet stick in the part; The Second is, the converting of the battered and bruised flesh into *Pus*; and the Third is that in common with all other Wounds, to wit, that the Wound be filled up with flesh, and then at length shut up with a *Cicatrice*.

### Of the drawing forth of the Bullets.

And First of all therefore the Bullets are

to be drawn forth of the Wound; and this is to be done either at the very first dressing; or if it be not then fit to be done, or that it cannot then be done; we are then to do it at some other time during the Cure. Now the bullets are wont to be drawn forth the same way they went in, and likewise that way whither they tend: for if the bullet shall penetrate very deep, so that it be found to be nearer unto the opposit part, and that through the Skin and the Flesh lying underneath it may be felt; then the part being opened by an incision, the bullet is by it to be drawn forth. But if the bullet shall not pierce so deep that it may conveniently be drawn forth on the opposit part; then the searching Instrument being put into the Wound that way the bullet went in, the bullet is to be sought for, and it being found, we must then attempt to draw it forth by a fit Instrument; which are various, and very different in their length and breadth.

Now there are these three things required in this extraction or drawing forth of the bullet. The First is, that the way be sufficiently opened by the Instrument. And then Secondly, that the bullet be laid hold on: Now the Instrument taketh hold of the bullet, either as a pair of Ciziers, or else as it fasteneth it self (in its extreame part, or point) into the bullet; either when it comprehendeth it within its Cavity; or else when it layeth hold thereon by its extreame part, made like unto a Saw. And from hence there springs a great variety of Instruments; of the which some lay hold on the bullet, and draw it forth as they are fastened into the bullet: and others of them Comprehend the bullets, as they are broader and hollow at the end; and others, as they are in their extreame parts notched and made like unto Saws; of which some are straight, and others somewhat Crooked, according as the Wound is in its progress either straight or oblique. And Thirdly, the Bullet being laid hold on by the Instrument it is by the Chirurgeons hand together with the Instrument to be drawn forth. The Instruments that are fit for this purpose we may find extant in *Paræus* his *tenth B. and 14. Chap.* in *John Andreas a Cruce*, and *Guilhelm. Fabricius*, in his *1. Cent. Observat. 88.* where he sheweth us a very easie way of drawing out these bullets with Instruments there described and delineated; and by a new invention of his own he maketh that known common Instrument in the form of a *Wimble*, more apt and fit (then it was before) for the drawing forth of these *Laden* bullets. For whereas if the Common *Wimble* be fastened in the Bullet, the said bullet may easily be stirred

and turn'd about together with the Wimble: which, to prevent, he first of all puts down (very gently) a pipe of Silver, or Iron, or Brasse, polished and made as smooth as possibly may be, and then anoynted with the Oyl of Roses; and this he thrusteth down even as far as the bullet. And then after this he conveyeth in another pipe or little Cane, at the one end toothed, or like unto a Saw; and so indeed, that the teeth thereof pass from the left unto the right, and that they may hinder the bullets being turned about when the Wimble is fastened in it. And then at length by this Second pipe the Wimble is let down; and when it shall be found to be sufficiently fixed in the bullet, then the Wimble with the Bullet (and both the pipes) is to be drawn forth. But if the bullet cannot be found cut by the probe or searching instrument (as it happeneth now and then in wounds when they are very deep) then the Wound is a long time to be kept open, and suppurating Medicaments to be made use of; and the Member is so to be placed, that the bullet may fall forth of it by its own weight. And so sometimes we have known it, that Weapons or bullets that have layn hid for a while in the body, they have at length (in the progress of time) either been drawn forth by the help of Art, or else they have been expelled by Nature. Unto Nature, therefore (if the bullet cannot be found out) the whole business is to be committed; and the same is likewise to be done, if there be any danger at all in the drawing of it forth; and, the rather, in regard that leaden bullets may lie long, and be carried about in the body, without any hurt or detriment at all unto the Wounded party; which cannot be said touching Iron or Brasse bullets, which because that they contract a Rustiness, they will not suffer the Wound to be healed.

But yet nevertheless, if the bullet stick fast in any Noble parts or that part that may easily draw the Noble part into a Consent with it, and that by reason of the Wound in it self the Patients life seem to be much endangered; the Chirurgion ought not in this Case so much as to attempt the drawing forth of the bullet, since that by this means he cannot bring any help at all unto the wounded person, but may very easily hasten on that death, which the wound of it self would have brought upon the Party.

But then it is not the Bullets alone that are to be taken forth; but because that by means of these oftentimes the spills or splinters of Wood, Paper, fragments and pieces of Arms, and Garments, and other things of this nature, are violently carried into the wound;

all these therefore are in the first place to be drawn forth, & indeed this extraction is most fitly put in practise in the very beginning, and so soon as ever the Wound is made, in regard that the pain is as yet but little, & so likewise the inflammation is not so great as afterwards. But yet nevertheless, if such things as these cannot be drawn forth at the first dressing of the Wound; this is then to be done in the following dressings.

*Of those Medicaments that are necessary for the Wounds inflicted by Gunshot.*

And indeed, it may likewise verily well be, that in these wounds there may be need both of venesection and purgation. But since that neither of these is proper unto the Wounds we are now treating of, but common unto them with other wounds, those things that we spake before on this subject touching wounds in general, may likewise here take place.

And therefore our first and main care must be, that what is bruised may be turned into Pus, and that it may be separated from the sound flesh and the sound parts. But in regard that the bruised parts may easily receive and gain a putridness, and that there may be great danger of a Gangrene nigh at hand, those ordinary and common digestive and suppurating Medicaments that are made use of in other tumors and wounds, here simply have no place; especially if any of the Nervous parts chance to be bruised; which cannot well bear nor admit of such kind of moyst and simply Oily and fat Medicaments, and require those that are dryer; but such are to be made use of that do in very deed make for the turning of the bruised flesh into Pus, and yet not produce any putridness. Which Medicaments have withall a virtue likewise to mitigate and moderate the pain. *Quercetum* (in his *Sclopetarius*) that he might the better prevent all those inconveniences that are wont to proceed from the use of common suppuratives, unto every ounce of these Suppuratives or Digestives he addeth one dram of precipitate Mercury. But I conceive that great caution is to be had in thus doing; and that nothing is to be done rashly. For though where there is present a putridness, and fear of a Gangrene nigh at hand, I do not at all dissuade the admixture of the said precipitate Mercury; yet nevertheless I say, that in all wounds whatsoever inflicted by Gunshot this is not either Necessary, or alwaies safe, since that experience testifieth, that many such wounds have been cured without the admixture



ture of Mercury; and there are many other Medicaments more safe, that may prevent and keep off this putridness. And if the Nervous places chance to be wounded, this Precipitate Mercury may very easily occasion an extraordinary great pain.

Ambrose Parry received (as a great secret) this following Liniment, or Balsam, from a certain Chirurgion, Famous by reason of that happy and successful way he had of Curing these Wounds by Gun-shot.

Take Oyl of white Lillies, or violets, four ounces; in these Oyls let two young Whelps (as young as you can get them) be boyled, until their very bones be dissolved: after this add of earth-worms washed in Wine, one pound; Boyl them together, and let them be strained without any strong expression; and into the straining add of Venice Turpentine three ounces; Spirit of Wine, one ounce; mingle them and make a Liniment; which bath in it a wonderful virtue in mitigating of the pain, and ripening the Pus.

This is likewise singularly useful,

Take Oyl of Lin-seed, and Oyl of white Lillies, of each three ounces; Unguent Basilick, one ounce, and mingle them.

And very useful likewise is the Oyl that is pressed forth of Hemp-seed. Or,

Take Oyl of Hemp, and of Lin-seed, of each four parts; Honey, one part; Allum half a part; mingle them over the Fire. Or,

Take Oyl of Hemp, one pound; of Lin-seed, three ounces; Juice of Plantane and Nightshade, of each a sufficient quantity; and boyl them, until the Juices be consumed. Or,

Take Oyl of Hemp, and Flax, of each three ounces; Oyl of Roses, one ounce; Oyl of Mastick six drams; Oyl of Camphire half a dram; boyl them together, and let them be wel mingled, and used warm. Or,

Take Oyl of Flax, and of Hemp, of each four ounces; of white Lillies, Camomile, and Roses, of each three ounces; Oyl of Turpentine, one ounce; mingle them, and let them melt together. Or,

Take Turpentine four ounces, Frankincense and Mastick, of each three drams; Myrrh, one dram; Oyl of St. Johns-wort two ounces, the Yelks of two Eggs, Saffron a little, and mingle them. Or,

Take Honey and Turpentine, of each four ounces; Allum and Crocus Martis, of each two drams; Roots of round Aristolochy, powdered, and Aloes, of each half an ounce; and mingle them. Or,

Take Turpentine and Honey, of each three ounces; the Yelks of six Eggs; and boyl them to the Consistence of a Liniment.

If there be any fear of putridness, (as nigh at hand) then these things following are to be made use of.

Take Oyl of Hemp, Liquid pitch, and Turpentine, of each two ounces; Oyl of Roses, Mastick, Frankincense, of each one ounce; Allum half a dram; Galbanum, Nitre, Salt Armoniack, of each one ounce; Verdigrease, Oyl of Earth-worms, Ponder of Earth-worms, Oyl of Turpentine, white Vitriol, and Camphire, of each one dram; Oyl of Lin-seed, two ounces; mingle them, and let them melt over the Fire. Or,

Take Oyl of Hemp, and of Flax, of each one pound; Salt Armoniack, and white Vitriol, of each half an ounce; Vernish, three ounces; mingle them over the Fire. Or,

Take Oyl of Flax, and Oyl of Hemp, of each six drams; Salt Armoniack, and white Vitriol, of each half an ounce; Treacle and Mithridate, of each two drams; let them melt together over the Fire. If there be yet a greater fear of putridness, and a Grangrene, then there may be some Mercury Precipitate added unto the former Ingredients. As,

Take the greater Basilick Unguent of Mesues, two ounces; fresh Butter one ounce; Mercury Precipitate two drams; and mingle them.

But then that the afflux of the Humors may the better be prevented, Defensives are to be applied unto the more remote parts, from which this afflux may happen. As,

Take Bole-Armenick, and Dragons blood, of each one ounce; Frankincense and Rose flowers, of each half an ounce; the whites of three Eggs; mingle them with as much Oxyrhodium as wil suffice; and let them be put upon the part in a remote place.

Or else let those parts be anoynted with the following Unguent.

Take Oyl of Roses, Oyl of the rinde of Elder, and of Mastick, of each two ounces; Bole-Armenick half an ounce; the Santaline Unguent one ounce; Vinegar of Roses as much as wil suffice, and mingle them.

Neither will it be amiss, to lay on some Cataplasme upon the wounded part it self; that may cherish the heat of the part, help forward the suppuration, and prevent putridness. As,

Take Marsh-Mallow Roots one ounce; the greater Consound six drams; flowers of Camomile, Melilote, and St. Johns-wort, of each half a handful; Wormwood three pugils; boyl them to a softness, and then mash them together; after this, add of Barley Meal, and Bean Meal, of each one ounce and half; Wine as much as will suffice; boyl them again, and make a Cataplasme.

whether the  
Seto may in  
this case be  
administred.

But now touching the Application of these Medicaments we are likewise to give you notice of this that it hath been in use with some, that if the bullet have wholly penetrated through any member of the Body, in so much that the wound appeared on both sides, they then administer their Medicaments by the *Seto* or *Setaceum*, made of Hemp, Flax, or Silk, which the Germans call *Durchzug*; and as often as they open and uncover the Wound, drawing about the *Seto* this way and that way, they remove it, and anoint it with a new and fresh Medicament. But in regard that in this manner and by this means the passage forth of the *Pus* is stopp'd up, and a pain excited, it is apparent, that the use of these *Seto's* is not safe enough; since that the same may likewise be performed by Tents put in on both sides; and that Wounds which appear on one side only may be cured without any use of these. But yet nevertheless, the *Penecilli* or Tents themselves ought not to be over thick, lest that they hinder the issuing forth of the *Pus*, and cause a pain.

How often these  
Wounds  
are to be  
opened.

And indeed, it will be sufficient at the beginning that the Wound be dressed, and bound up once a day only, in regard that then at the First there is scarcely any thing in the Wound that will require Evacuation. But so soon as ever the *Pus* beginneth to flow, it is then to be opened and dressed twice a day; and when it floweth in that abundance, that unless it be often evacuated it may cause great grief and pain to the wounded person, then it will be requisite likewise to open and cleanse the Wound from the *Pus* or corrupt purulent matter, three times a day. But when the *Pus* begins again to be diminished in its abundance, it will suffice then twice a day to open and cleanse the Wound. And at length, when there floweth forth very little of the said *Pus*, and that the Wound beginneth to be filled up with flesh, it will then be sufficient to open, cleanse, and binde up the Wound once a day, as at the first. But First of all, we must endeavour that (here) there may be a passage opened for the *Sanies*, or thin Excrement, to flow forth, which in these Wounds is in great abundance heaped up, and gathered together, by reason of the Contusion of the parts, as also because of the fragments of the bones that Nature endeavoureth to expel: and this may be performed by Tents, that (if need require) may be hollow. And if *Splenia* (as they term them) or Linen thicker then ordinary, three or four times doubled, be imposed upon the bot-

tom of the sinus; and that afterward the *Pus* and *Sanies* be pressed forth by a harder and closer binding, this will very much advance and help forward the flowing forth of the said *Pus* and *Sanies*.

But there is sometimes so great an abundance of the *Sanies* gotten together in the Wound, and the *Sinu's* are so deep and winding, that the *Sanies* cannot all of it either flow forth, or be pressed forth of the wound; and therefore then the *Sinus* is to be cut, that to the *Sanies* may flow forth, and the *Sinus* may be cleansed.

Neither are the vulnerary potions here in this case altogether useles and to no purpose; for in regard that they cleanse the Ulcers, and free them from the filth of the Excrementious Humors, and cause that all things in the Wounds that are from without (and Heterogeneous) may by Nature the more easily and sooner be thrust forth of the said wounds; if there be need of these potions in any other kind of Wounds, then certainly they are here most of all necessary. But touching these vulnerary potions we have spoken before, in the *eleventh Chapter*.

After that Concoction beginneth now to appear in the wound, (which seldom happeneth before the third or fourth day (in regard that by reason of the vehement Contusion of the part its heat was greatly weakened, and the spirits exhaulted) and when there is now appearing neither any notable pain and Inflammation; and that which is bruised is for the greatest part turned into *Pus*, then the Wound is to be cleansed, filled with flesh, and at length shut up with a Cicatrice. And the truth is, when the wound is once become pure and clean, then it is very necessary that flesh be generated, because that the bruised flesh is all of it converted into *Pus*, and so the wound must necessarily become hollow.

And indeed as touching Cleansers these ought to be either weaker or stronger, according as there floweth forth a greater or less abundance of the *Pus*, and according as the Wound is either more pure and clear, or else more foul and polluted. As,

Take the Decoction of Burley, the Juice of Plantane, Smallage, Agrimony, and the lesser Ceitaury, of each one ounce; boyl them, and in the end add, of Turpentine, three ounces; Honey of Roses, two ounces; Frankincense and Mastic, of each one dram; Saffron, one scruple; and mingle them. Or,

Take Meal of the bitter Vetch *Orebus*, one ounce and half; Frankincense, and Orrace Root, of each six drams; Juice of Smallage, four ounces; Honey as much as will suffice; mingle

Mingle them over the fire, or,

Take The Meal of Barly, and of Lupines, of each one ounce : Frankincense, Myrrh, Aloes, of each half an ounce ; the powder of Orace Root two drams ; Juice of Smalage and Wormwood, of each three ounces ; Turpentine two ounces ; Hony one ounce : let them be boyled unto the consumption of the Juices. If the Wound be fouler then ordinary, you may then add some of the Ægyptiack Unguent. As,

Take The Meal of the Vetch Orobus one ounce ; Myrrh, and Frankincense, of each half an ounce ; Turpentine and the Juice of Smalage, of each two ounces ; Unguent Ægyptiack half an ounce ; Mingle them.

If the Sinus be very deep, it will be good then to wash it with the Decoction of the lesser Centaury, Horse-tayle, the greater Consound, Birthwort, Orace, Frankincense ; this Decoction must be made with Wine, adding thereto a sufficient quantity of Hony.

But then for the breeding of flesh, let the Medicaments that were before propounded be made use of. And this following is likewise very useful in these Wounds.

Take Oyl of Mistick one ounce and half ; Rosin of the fir tree, one ounce ; Manna Thuris (or the fine flour of Frankincense) half an ounce ; the herb Horstail, To-mentil, the greater Consound, St. Johns wort, Plantane, and Betony, of each half a handful ; Earthworms washed in Wine two ounces ; Wine as much as wil suffice. Boyl them until the Wine be consumed : and afterwards strain them, with a strong expression and squeezing of them ; and then add of Wax and of Goats sewer, of each four ounces ; Frankincense, Myrrh, Mastick, and Aloes, of each half an Ounce ; Mingle and make an unguent, which may be layd upon the Wound ; and this Unguent may be covered with the Emplaster Diapalma. If the Wound be infected with poyson, then the Wound caused thereby is to be referred unto the poysoned wound ; touching which we shal speak further in the following Chapter.

But if the wounded part begin once to be taken with a Gangrene, then the cure is so to be ordered as we told you before, in the last Chapter of the second part, touching a Gangrene.

But now this is one thing that especially renders wounds inflicted by Guns difficult to be cured, when in the Arms, the thighs, and the Ankles, bones are broken ; yea and many times shattered into divers fragments ; in which, since that for the most part the Nervous parts are hurt, when these come to be purged from these fragments of the bones, there wil from thence arise most

sharp and acure pains, convulsions, yea and the Gangrene it self, after all. Which if it happen, the Common Chirurgeons frequently hasten all they can to the amputation and cutting off of the whole Member. But although notwithstanding, that this may sometimes be done ; yet nevertheless this is not to be put in practise so long as there is any the least hope left of a Cure ; seeing that Nature is wont even in these wounds also to work miracles as it were.

The way of Curing is the same as of fractures with a wound ; of which we shal treat further in the next part, to wit, the fifth, and the Second Chapter. The first and main care therefore must be, that the great fragments of the bones be restored again unto their places, and that they may be there joyned together : But yet nevertheless in administering of the Splinters ( which are otherwise wont to be applied in the fractures of the bones ) there ought great caution to be had ; since that by the use of them there may easily be excited a pain, Convulsion, Inflammation, & at length the Gangrene it self ; unto which Maladies these Wounds are otherwise obnoxious ; like as also those Glutinating Cataplasms, ( which stick so close and fast unto the part, and bind it so streightly together ) have here no place ; neither are they rashly and inconsiderately to be made use of, because that they bind together and streighten the part, and thereby cause pain. It is therefore most convenient, that after the bones are again composed and conjoynd, the Member be placed and fastened in a thin plate of Lead, or in a skin moistened, or with those slivers or chips that wheel-wrights ( while they hollow the holes of their Carts and Wains ) cut forth with the hollow Auger or Wimble, after they have been first moistened with water. For all these things as they hold the broken part together, so they do it in such a manner, that they may notwithstanding be bent as much as you please, that so they may not cause any pain.

But now in the stead of those Cataplasms there may be layd on some Emplaster or Cerote. As,

Take Rosin and Wax, of each half a pound ; the powder of the barque of the teyl tree, one ounce and half ; Turpentine two ounces ; Bole armenick one ounce ; the Juice of the herb Storck bill, or Cranes bill two ounces ; boyl them to the Consistence of a Cerote. or,

Take Mucilage of the Root of the greater consound, the Gum or Juice that sweats out of the Apple tree, of each three ounces ; the Juice of the greater Comfrey ; and Bole Armenicks, of each an ounce and half ; the Juice of Cranes bill, six ounces ; the powder of the rind of the Linden



*Linden or Teyl tree two ounces; the yelks of twenty Eggs, Turpentine half a pound; the oyl of Earthworms three ounces, mingle them.*

You shall have more of these prescribed, blows in the fifth part, touching *Fractures*.

### The Dyet.

Let the Air be dry; and in other Respects temperate; and rather inclining to heat, then cold. Let the Patients food be sparing; and yet nevertheless, there is here also a regard to be had unto the Patients strength, and his accustomed Dyet: and as in all other, so especially in this kind of Wounds, his Meats must be of a good Juice: but he ought carefully to abstain from all those meats that yield a naughty and corrupt Juice. Let the Patient altogether forbear the drinking of wine, unless he hath been much accustomed thereto: for whosoever he be that hath wholly accustomed himself to the drinking of wine he wil hardly away with the drinking of Water, in case Beer should be hard to come by. Let the Wounded person likewise carefully shun all occasions of Anger, abstain from all over swift and violent motion of the body; in regard that rest (as Hippocrates in his Book of Ulcers teacheth us) is the most fit and requisite for all that are wounded, and on the contrary, all labor hurtful. He must likewise avoid Venery, by keeping himself from womens company. And in a word, if ever there be need of an exact and accurate Dyet in other wounds; then certainly the most exact Dyet that may be is much more especially required in this kind of Wounds.

### Chap. 21. Of Poysoned Wounds.

**T**ouching those poysoned Wounds, you are to understand that these poysoned Wounds require a peculiar kind of Cure by themselves; whether it be by poyson put upon the bullets, Arrows, Darts, or whatsoever other kind of poysoned Weapons; or else by the biting of any living Creature, as a Dog, or a fierce and raging Wolf, or some other poysonous Creature; or else by the blow of a Scorpion, Aspe, or any other venomous Creature whatsoever. And the very truth is that those wounds that are thus inflicted by the biting or strokes of poysonous Creatures (whether wild beasts or any other) they do more hurt by their venomous quality than by the Wound it self; which for the most part is but sleight and of no great moment; whereas those Wounds that are inflicted by poysoned weapons do not only hurt by their poysonous quality, and by vir-

tue of the poyson wherewith they are infected, but they are likewise oftentimes very dangerous simply as they are Wounds.

*The Moravian Disease.* We must not here pass over in silence that Disease which is contracted from Scarifications; some have called it the new disease of Moravia, and the sickness of Brunna; because that it first of all began to shew it self at Brunna a town in Moravia, in the year 1577. touching which Thomas Jordan hath published a special Treatise, which Joban. Schenckius hath inserted in the sixth Book of his observations. And touching this same disease or plague, Joban. Sporischiu hath writen a Tract, and inscribed it, of the Symptoms of Scarification. And Job. Crato likewise maketh mention of this same Disease, in his *Epist. collecta* by Scholzius, *Epist. 139.* The Sum of the whole business is this in brief. *Alwhosoever they were that in the year 1577. on St. Lucie day* (from what followeth notwithstanding I Collect this, that not only those that were thus scarified on the first day of Winter were taken with this Malady; but that all likewise that made use of these Scarifications from that first day of Winter, even unto the vernal or Spring Solstice) *went into their publique Bath at Brunna, and had these scarifications administered to them, they instantly seemed to be taken and surprised with this Malady.* Neither did they yet presently perceive the hurt and mischief thereof, although that forthwith there appeared some certain signs of the disease, now gotten into them. *There were some that had the disease lying hid, and not discovering it self for the space of Eight days; in others the Malady lay concealed a fortnight, and in others during the whole time of their courser; to wit, according to the strength both of the Malady, as also of the party now affected therewith.* But at length it manifested it self publicly. In the mean time those that were taken with the disease were observed to be affected with an universal kind of sloath and dull sluggishness; and being thus taken with sloathfulness they became lazy, and altogether unfit and indisposed for the discharge of their Callings and wonted business; and they were likewise Melancholly, and of a sad countenance. The Native fresh colour of their face was suddenly turned into a paleness, the Vigor and quickness of their eyes into wilde and fierce looks, there appearing in them a deformity with a dun and duskie Circle as it useth to be in women that have their Courser upon them. And then it soon discovered it self by manifest and apparent signs. After the application of Cuppinglasses, they were immediately invaded by an extreme great and incurable heat; and after this there followed filth by impossibilities, and putrid.

putrid rotten Ulcers, flowing with Sanies and foul black gore-Blood: and round about there appeared also certain pushers as broad as the Palm of the Hand, together with other running sores; out of which when they gaped, and were opened either with the Needle, or Medicaments, there issued forth a thin pituitous or Flegmatick matter, wheyish, and rotten, as also a stot-ty Sanies; and in others this thin pituitous matter was likewise sharp and corroding: then the Flesh al of it that was comprehended within the Circumference of the Cupping-Glass being corroded and putrifying sent forth a stinking savour, such as is wont to arise from the Telephian Phagedenical Ulcers. Where it was worth observation, and to be wondered at in the very beginning, that of so many Cupping-Glasses as were affixed (some having had ten or there about, and others also not above three of these Cupping-Glasses fastened and affixed unto their Flesh,) only one of them, or two at the most, of all these, brought forth any of the said filth and Corruption; the Mother in Law of one Laurentius a Taylör only excepted, who of fifteen that were applied, had three that produced of the aforesaid impostumated matter. You might have seen some of them with their whole bodies all overpread with Pustules or Pushers (as we cal them) their Face deformed, their Countenance sad and dejected, their look terrible and frightful, their Back, Breast, Belly, Feet, even all places from the Head to the Foot of them, polluted and defiled with a scurfie scabbiness, and with Crusty Ulcers lifted up a little above the Skin, as broad as the Nail of ones Thumb, with a red Circle, and a white superficies and outside. And out of these Ulcers also did continually run a kinde of Fat liquor, and other Excrementitious filth and corruption, that did more resemble the thin and cleer Sanies, then the thicker Excrement that we cal Pus. Yea and moreover, the scabbiness being removed and cured, there stil remayned certain black spots, somewhat differing from those that appear in the Impetigo and the Vitiligo, which are of a dark, Leaden, and Durskie colour. In the progress of the Disease there grew together in the Head certain Callous or hard Crusts, which being with the greatest pain broken or disiected did sweat forth a kinde of matter not unlike unto Honey, and very tenacious (such a kinde of Juycce as we may see to defile from those Treer that bear a fruit like unto the Pine Apple) a certain substance (I say) thick and clammy, and therefore an Argument of the ripening and withering away of the flegm. These sordid and filthy impostumes (they being indeed of the worst sort of all others) were no sooner thoroughly cleansed and purged with a great deal of trouble, and much difficulty; and no sooner were those parts grown together with

a little flesh brought over them, but out there breaks a new Symptom. The Limbs of the whole Body, the Arms, Shoulders, Shoulder-Blades, Elbows, Calves of the Legs, Ankles; and bottom of the Feet, they were all extremely twinged and pulled with a certain kind of pricking, like unto stings; and as if they had been sawn assunder with some Iron Instrument. The members were all of them so heavy by reason of their weight, that they needed something to underprop them, and bear them up: yea and many of them also that had a palsie threatened unto them were fain of necessity to be born up, and carried upon mens Shoulders: And yet for all this they had no rest day nor night, being wracked with continual and incessant pains. And these tormenting pains were not for a day or two, but they lasted commonly for the space of a whole moneth. And the Head likewise that was not free. For besides the Achores above mentioned, together with the Gummy and Callous risings therein, (not unlike unto great warts) it was grievously infested with vehement pains (and especially about the binder Region thereof) which by reason of the weakness and decay of the Parties strength, as also through the want of due rest and sleep, caused many of them to be Mad; which said Madness of theirs left them not until for a long while together very much of the aforesaid purulent snot and filth (of a most offensive and stinking Savour) had run forth from the Head by the Nosebrills. And all the whol time that the Disease had its course they took no pleasure at all in the gifts and comforts of Ceres or Bacchus, that is say, they were not at all delighted with their Food, whether Meat or Drink. They abhorred likewise and shun'd all manner of converse with others, either out of shame, or else for Anger and Indignation, when they beheld themselves (without any desert on their part, as they thought) quite over spread with a horrible and Contagious Disease, and of which they had smal hope to be recovered. This Disease continued the whole Winter long, even until the spring Equinoctial, that is, the Suns Entrance into the sign of Aries; about which time it manifestly declined, and was Judged to be quite ceased about Easter; because that after that time there was none found to be wholly overspread with this strange and (until then) unheard of Disease.

As touching the rise and original of this Disease, there were two Opinions especially. For some there were that thought it to be a new kind of the French Disease, by Contagion, or infection propagated in the hot House or Stove of the Bath: but others conceived that this poyson was communicated by the Scarification. The Chief Magistrate of the Town made a very diligent and strict

enquiry as touching the Cause of this Disease; but he could finde very little or nothing of a certainty. *Johā. Sporischius* (in his *Tract before alleadged*) admits of neither of these Causes before mentioned: but he conceiveth that this Malady had its original from a Pituitous and Flegmatick Cacothymy, heaped up in the Body by the unhealthy Constitution of that year; and wihal that overmuch and Unseasonable Scarification drew these vitious Humors unto the Scarified places. And that he may the better prove this, he writeth many things touching the Scituation of this Town, and concerning the Dyer, and the Diseases of the inhabitants: and from all these put together he proveth that there was collected great store of this Flegmatick Humor.

And the truth is, that it is not altogether so plain and evident, from whence that Disease was at first contracted. For if it had its original from Scarification; then the Cause is not evident, wherefore this infection continued only from the Winter until the vernal or Spring Equinoctial, and no longer (unless haply any one will render this for a cause, that after this time none durst by reason of the fear they apprehended of a danger, make use of these Baths, or else because that this Bath was almost destroyed, and then again renewed) and why all the parts unto which the Scarified Cupping-Glasses were affixed were not exulcerated. For (in the Histories of the infected) *Thomas Jordanus* taketh notice, that a certain person who had five of these Cupping-Glasses affixed unto several places of his Body, yet that only two of all those places, (to wit, the hinder part of the Neck, and the Region of the left Loyn) were exulcerated; and he telleth us likewise of a certain Maid-servant that had seven of these Cupping-Glasses applied unto several parts; of all which, the Skin was exulcerated only under one of them, to wit, that which was affixed unto the right Shoulder-Blade: and there he assureth us that the very same happened also unto many others. But now, this seemeth to make very much against those who will have this Malady to proceed from the vitious conflux and storing up of the Humors, to wit, that there being at that same time three publique Baths at *Brunna*, they only were infected who made use of Scarification in that *Adams* Bath, which ought likewise to have happened altogether alike in them all, if the Disease had its original from the vitious Humors gotten together in the Body. But the opinion of *Sporischius* (as he determineth that this affect proceeded from the pituitous or Flegmatick Humor) doth no way deserve that any assent

should be given unto it. For it easily appeareth unto any one that well weigheth the History, and considereth the Symptoms of this Disease, that the Cause of this Disease was from somewhat that was poysonous.

And yet nevertheless the Second opinion seemeth to me the more probable. For (like as *Crato* taketh notice, and giveth us to understand) since that there was not any one infected besides those that used Scarification, (and that also in this Bath only, and not in any other) it is therefore very likely and most agreeable to the truth, that by cuts and wounds inflicted by Scarification there was some kinde of poyson derived unto the Body; whether this poyson were imparted to the Body by the edg of the Penknife infected, or else by the Cupping-Glasses, or by some poysonous Vapour of the Bath, or from the Water, or by whatsoever other means it were. For it is a thing generally well known that Arrows are by many Nations infected with Poyson: which might likewise as well be done in the Penknife wherewith the Scarification was made, whether this came to pass by the Malice and wickedness of the keeper of the Bath, or else by his carelessness and want of Circumspection; whiles that with the very same Knife with which he Scarified some impure person, he likewise Scarified others, who were thereby infected; seeing that it is a truth very well known, that the opening of a Vein hath oftentimes fallen out very much amiss, that hath been performed by the same Penknife wherewith another mans Ulcer hath been opened. This poyson might likewise be communicated unto the Scarifying Knife from the Hone or Whetstone, (upon which these Instruments are wont to be rubbed hard, thereby to have an edg set upon them) if from the Vapor of the Bath any filth and Malignity should chance to stick unto them. There might likewise some contagion cleave fast unto the Cupping-Glasses, that are not alwaies wiped and made clean with that care and diligence as they ought to be. And Lastly, it is not altogether impossible that the Vapour of the Bath might insinuate it self into the Skin newly Scarified; or else into the water with the which the Scarified places are washed: which said Vapor is not evermore pure, but is sometimes defiled and infected by the sweatings, and filth, that come from divers persons. And that which also maketh much hereunto, may be this, that from those very Stones upon which the water is poured forth for the heating of the Stove or hot House there is lifted up great store of Vapors, which are not alwaies pure, but oftentimes very ill disposed, by reason of the



the filth and pollutions of the Bath, and the perpetual moystnes of the place.

*Another History of the like afflict.* And in this opinion I am confirmed by a History of the like Scarification, that not many yeers since happened in *Franconia*; the History we have extant in the 2. B. of

the *Medicinal Epist. Sect. 6.* of that Eminent and Famous Physician, *Dr. Gregorius Horstius*; by which it appeareth that persons infected were all overspread with pustules or pusses, and as it were Cancerous Ulcers, not only in the Scarified places, but almost all the Body over; they suffered also very extreame pains of the Limbs, (pains as if they would have even broken the bones,) whereby the Diseased persons were so greatly weakened that they were not able to raise them out of their Bed without the help of others, and by leaning upon them. But to conclude: this Malady altogether proceeded from the Malice and evil practise of the wicked Bath-keeper, who (as there we may finde it extant in his own confession) three or four times a week was wont to rub the Herb *Aconitum* upon the whetting block of Wood (being covered over with Leather or a Skin,) with which he was accustomed to sharpen the edges of his Penknives; as also the powder of the Metallick *Cadmia*, such as is digged out of the Earth; or the powder of the stone *Cobaltum*, and Rars-bane; he confessed likewise that he rubbed upon his scarifying Knives the powder of Locusts; and that he also dried Toads, and afterwards macerated the powder of them in Water; which said water, together with the powder, he poured out upon those Stones upon which (in the time of bathing,) the Water was wont to be poured forth; for the heating of the Stove or hot House, into which they entered when they went out of the Bath.

### Signs Diagnostick.

Poysoned Wounds if they be inflicted by poysonous Creatures, this will appear by the relation of the sick person; and even by this it will be known, that these Wounds proceeded from such kind of Creatures, because that they are envenomed. But if the Patient be wounded with a Darr, or any other kinde of Weapon, or a Leaden bullet, this is known by the extreame great sense of pain and pricking that is felt in the wounded place; and by this also, that the Natural colour of the wounded part is quite altered and changed, degenerating into a Wanneffs and Leaden colour, or blackness; and that instantly upon it grievous Symptoms (for which no Reason can possibly be given) do follow upon the Wound; and that in the whole Body

there is perceived and felt, sometimes an extraordinary heat and burning, and sometimes a kinde of stupidity and great streightning of the Heart, and sometimes the trembling of the Heart, together with dangerous fainting and swooning Fits.

For so soon as ever the poyson is received in by the Veins and Arteries, it immediately diffuseth it self throughout the whole Body; and oppugneth the most principal members, and especially the Heart, (as it is the Nature of all poysons so to do) from whence divers Symptoms are excited: And these indeed are the more general Signs of a Poysoned Wound; unto which afterwards (according to the Nature of each Poyson) very many other Symptoms do adjoyn themselves.

### Prognosticks.

1. Every Wound that is inflicted by any poysoned kinde of Weapon, or by the biting, stinging, or stroke of any venomous wilde Beast; is far more grievous and dangerous then that Wound which is free from Poyson. And a smal Wound likewise when it is thus Poysoned may (and often doth) bring Death: whereas otherwise great Wounds may be healed.

2. And indeed by how much the more for number, and greater for danger, and contumacious the Symptoms are, and unyielding unto the remedies administred (though never so fit and proper) by so much the more dangerous they are, and for the most part deadly. But if the Symptoms be but few, and those not very grievous, and such as are mitigated by the Remedies administred, there is then so much the greater hope of Recovery and safety.

3. By how much the Poysoned Wound is nigher unto the Heart, by so much the more dangerous is it; and so likewise for that wound that is neer unto the Brain.

### The Cure.

It sufficiently appeareth what Indications a wound, considered as a wound, pointeth out unto us, and supplyeth thus withal; and it is likewise sufficiently manifest (by what hath hitherunto been said) how it is to be cured. But now if we look upon it as poysoned, then we are to endeavour in the first place, that this poyson may not penetrate unto the more interior parts, especially the Heart; and then in the next place, that its power and strength may be broken and weakened by Alexipharmick Medicaments; which we commonly term Counter-Poysons. And therefore first of all, we ought carefully to heed whether any part of the poysoned

Weapon yet stick fast within the Wound. For indeed all our attempts of curing the Wound will be frustrated, unless the weapon be drawn forth; and therefore we must labor that with all possible speed it may be taken forth by the operation of the hand: but if it cannot thus be taken forth, then together with the emplasters which have a power in them of calling forth the poyson, we are to mingle with them those things that are able to draw forth the Weapons and all other extraneous bodies out of the Wounds; touching which we have spoken above in the eighth Chapter. And then moreover, that so the poyson may not penetrate unto the more inward parts, especially the heart, first of all (as *Celsus* in his fifth Book, *Chapt.* 27. teacheth us) *that member is to be bound up upon the wound, but yet notwithstanding this binding must not be overhard and streight, lest that the member should hereby be benumbed, and lose all its sense and feeling; or that (which sometimes through the unskilfulness of the Chirurgeons cometh to pass) it should be taken with a Gangrene.* Then the poyson it self is to be drawn forth, and called out unto the more external parts. The Ancients to extract and call forth the poyson, were wont to appoint the sucking of the wound; and they who performed this office they termed *Psylly*; and they thought that these had a kind of propriety of attracting and drawing forth the poyson by sucking, and also of resisting the sayd poyson; whereas the truth is that it was only to shew their boldness and adventurousness in thus doing; touching which *Celsus* in his fifth Book, *Chapt.* 27. thus writeth: *but if this indeed (sayth he) be not done (that is, if there be want of a Cupping-glass, or the like) then a Man is to be provided, who may suck the poyson out of the wound. Neither indeed have these men (whom they call Psylly) any more special and peculiar knowledge then others; but only a boldness and confidence confirmed by much use and practise. For the Poyson of a serpent (as likewise some certain poysons that Huntsmen use) hurt not by their tast, but only they imployson a Wound. And presently be add; and therefore (sayth he) whosoever he be that following the example of those Psylly, shall suck the Wound, (and yet would both himself be safe, and so also preserve him for whom he doth this office) let him carefully attend this advice (that so he perish not) that he admit not of any part of the Ulcer into his Gums, or his Palate, or any other part of his mouth.* Now the truth is that the poyson is most safely drawn forth by Cuppinglasses especially in the bitings and strokes of venomous Creatures; which said Cuppinglasses wil draw forth the poyson the more power-

fully, if unto them there be added and administered Scarifications; and especially if they be made deeper then otherwise upon sleight occasions. After the removal of the Cuppinglasses, then the Gutts of Hens or other birds, or (if you please) the bodies of them being cut in the midst, the parts whiles they are yet hot may be layd upon the Wound. And if the place be not nervous, (in the bitings of these poysonous Creatures) the flesh round about it is to be pared away, yea and quite cut off: And *Galen* relateth of a certain vine-dresser, that being bitten by a viper he presently with the pruning hook cut off the finger that was bitten; and so by thus doing escaped and avoyded all the danger. It will likewise prove to very good purpose, if the wound be washed with Vinegar or Wine in which Treacle hath been dissolved; or with the Decoction of Camomill-flowers or the root of the slow or sharp dock Yea and in the bitings of poysonous Creatures (if the place that is wounded be not Nervous) a most effectual remedy is the Actual cautery, that by the force and power of the fire doth both consume the poyson, as also prevent and hinder the penetrating unto the more internal parts. But if the sick person wil not admit of an Actual Cautery, then the potentiall Cautery, or caustick Medicaments are to be administred. And care is likewise to be taken that the Eschar may fall off as soon as may be; and if it fall not off soon enough of it self, the wound is to be freed therefrom with the penknife; neither is the ulcer immediately to be glutinated; and therefore an Onyon with Salt, or Wild Garlick, or Rue, are to be imposed upon the wound.

And these very things notwithstanding (although that Caustick Medicaments have not been premised) are to be imposed upon the Wounded or bitten place, for the drawing forth of the poyson; As for instance, the Onyon, Wilde Garlick, Rue, Doves dung, Walnuts, with Garlick, Salt and Hony, (as the Author of the Book of Remedies against poyson, telleth us in his fourth Chapter) which whether they be taken inwardly, or only outwardly imposed, are able to free from poysons (whether inwardly drunk, or else caused and brought upon the body by the bitings and strokes of venomous Creatures) *St. Johns wort, Swallow-wort, Elecampane, Raddish, Dittany, long and round Aristolochy.* Very useful also are *Cardus Benedictus, Scabious, Rue, Gentian, Vipers grass* and indeed all kinde of simples whatsoever that attra& and draw poyson, either by a manifest quality, as heat; or else by an occult quality, and peculiar likeness. Touching the former this is to be noted, that in those

those parts that are Nervous we are not to make use of Medicaments that are over sharp, lest so while we seek to avoid one danger we fall into another as great, in exciting both a pain and a Convulsion. And therefore in such parts the safest way will be to apply those Medicaments only that draw forth the poyson by the property of their substance. Neither likewise ought the use of sharp Medicaments alone to be long continued; but after they have been continued for a day or two, then after others more mild are to be imposed.

The Compositions are very many and various. Treacle is of singular use, if mingled with other Medicaments: which that some should therefore have in suspicion in regard that by reason of the coldness of the Opium it may possibly drive the poyson inwardly, this is indeed a most ridiculous conceit, in a time of so much light from the truth. Or else drop in *Matthioli* his oyl (which he describeth in his Comment upon the preface of the sixth Book of *Dioscorides*) or that of the great Duke of *Hetruria*; or the Juice of *Vipers* Grasse.

*Guido* in poysoned Wounds commendeth this Emplaster.

Take *Galbanum*, *Sagapenum*, *Opopanax*, *Asafetida*, *Myrrh*, *Pepper*, *Sulphur*, of each one ounce and half; *Doves dung*, and *Ducks dung*, of each two ounces; *Calamint* and wild *Mint* of each one ounce; Let the Gums be dissolved in *Wine*; and mingling them all with honey and old oyl, make an Emplaster. or,

Take *Turpentine*, the *Water* or *Juice* of *Swallow-wort* washed, two ounces; the *propolis* of *Beehives* two ounces, *Matthioli* his Oyl half an ounce; Oyl of *Turpentine* two drams, *Precipitate* a dram and half; *Water* *Germander*, and the *Root* of *Vipers* grasse, of each four scruples; mingle them and make an unguent. or,

Take *Ammoniacum*, *Galbanum*, *Bdellium* of each half an ounce, *Styrax* Liquid three drams; *Myrrh* and *Sulphur* that hath not felt the fire, of each two drams; *Euphorbium* and *Precipitate*, of each one ounce; *Matthioli* his oyl, and oyl of *Turpentine*, of each two drams; let the Gums be dissolved in *scillitick* vinegar, and then mingled with the rest; and then with as much *Propolis* and *Ship pitch* as will suffice, make a Cerote. or,

Take *Root* of *Dragon wort*, and *Round* *Aristolochy*, of each one ounce; *Tabaco*, and *Water* *Germander*, of each one handful; *Frankincense*, *Myrrh*, *Brimstone* that hath not been near the fire, of each half an ounce; *Dittany* of *Crete*, *Angelica* *Root*, and *white* *Dittany*, of each three ounces; Oyl of *Turpentine* two ounces; *Wax* and *Ship pitch*, of each as much

as will serve to return; Mingle them, and make an Emplaster. or,

Take *Tops* of *St. Johns wort* two handfuls; *Carduus* *Benedictus*, *Water* *Germander*, *Tobaco*, *Swallow wort*, of each one handful; *Rue* one pugil, *Root* of *Dragon wort* two ounces; *Sour* or *Sharp dock*, an ounce and half; let them be well bruised together, and then applied in the form of an Emplaster. or,

Take Oyl of *Olives*, and *Honey*, of each two ounces; *Quick lime* two drams, *Roots* of *round* *Aristolochy* one dram: make a Cataplasm. or,

Take *Onyons*, *Garlick*, *Leeks*, of each three ounces; boyl and bruise them, and then add the root of *Dragon wort*, and *Asphodill*, of each two drams; *Treacle* half an ounce; Oyl of *Scorpions* one ounce, and mingle them. Or,

Take *Ashes* of the herb *Trinity* or *Heart's ease*, and *Quick lime*, of each two ounces; *Wormwood*, *Round* *Aristolochy*, *Rue*, *Garlick* and *Onyons*, of each one ounce; *Figs* twenty in Number; *Goats dung*, Oyl of *Euphorbium*, and Oyl of *Scorpions*, of each three ounces; *Honey* one pound and half; *Wine* *Vinegar* one pint; Mingle them, and make an Emplaster.

More of these you shal have in the following sixth Book, touching the bitings of venomous Creatures.

And withall, (even instantly upon the receiving of the wound) there ought to be administered *Alexipharmaca* (or counterpoysons as we properly call them) that may Guard and fortify the heart from the poyson, and may expel it unto the outward parts. And indeed if the kind of poyson be known, we are then to oppose and counterwork it by its own proper and peculiar *Alexipharmaca*; touching which more in the following Book. But if the species or kind of the poyson be hid and unknown to us, then these universal or general *Alexipharmaca* (to wit) the *Beadar stone*, *Treacle*, *Mithridate*, *Treacle* *Waters*, and others of this kind, (every where commonly known) are to be administered.

And with the very same the Heart is likewise outwardly to be fenced and guarded; and therefore not *Treacle* and *Mithridate* alone, but chiefly the Oyl of *Matthioli*, is to be anoynted upon the Region of the Heart, and the Arteries; as also the Oyl of the Great Duke of *Hetruria*.

The poyson being drawn forth, we are then to hasten unto the Curing of the wound; for which purpose this Unguent is very usefull.

Take *Wax*, *black pitch*, *Rosin*, the soft fat of a *Ram*, and old oyl, of each three ounces; *Galbanum*, six ounces; Make an Unguent.

And afterwards, the Cure is to be performed as in all other Wounds.

But if we come to understand from the dangerous



gerous symptoms, (as cold sweats, faintings, swoonings, and the Syncope) that the poison hath now already penetrated unto the more inward parts of the body, and especially the Heart, then the wounded part is not much to be troubled and tampered withall, but in this case we ought rather to take care for the preservation of the whole body, but more especially the Heart.

### Chap. 22. Of Particular Wounds.

And hitherto we have been treating touching Wounds in General, as also touching the general Cure of them. But now in regard that the Cure of wounds is very different and various, according to the variety of the parts that are wounded; we should now therefore come to speak of them more particularly, (and in speciall;) to wit, of the wounds of each single part; But since that we have already handled them in our former Books, therefore here again to treat of them will be a thing altogether needless and superfluous. For in Book 1. *Part. 1. Chap. 21. 22. 23. 24. and 25.* We treated of the Wounds of the Head and Brain. *Ibid. P. 3. Sect. 2. Chap. 9.* Of the Wounds of the Eyelids: *Chap. 10.* Of the Wounds of the Eyes. *Ibid. Sect. 3. Chap. 5.* Of the Wounds of the Nostrills. *Ibid. Sect. 5. Chap. 3.* Of the Wounds of the Tongue.

*Lib. 2. Part. 1. Chap. 4.* Of the Wounds of the Lipps. *Ibid. Part. 2. Chap. 4.* Of the opening of the vessels of the Lungs. *Ibid. Chap. 11.* Of the Wounds of the Lungs. *Ibid. Chap. 15.* Of the Wounds of the Diaphragm. *Ibid. Chap. 17.* Of the Wounds of the Chest. *Ibid. Chap. 22.* Of the Wounds of the spinal Marrow. *Ibid. P. 4. Chap. 3.* Of the Wounds of the Heart.

*Book. 3. P. 1. Sect. 1.* Of the Wounds of the Oesophagus. *Ibid. Chap. 16.* Of the wounds of the Stomack. *Ibid. P. 2. Sect. 1. Chap. 8.* Of the Wounds of the Intestines. *Ibid. P. 4. Chap. 7.* Of the Wounds of the Spleen, *Ibid. P. 6. Sect. 1. Chap. 7.* Of the Wounds of the Liver. *Ibid. P. 7. Sect. 1. Chap. 11.* Of the Wounds of the Reins. *Ibid. P. 8. Sect. 1. Chap. 5.* Of the Wounds of the Bladder. *Ibid. P. 9. Sect. 1. Chap. 5.* Of the Wounds of the Testicles. *Ibid. Chap. 11.* Of the Wounds of the Yard. *Ibid. P. 10. Chap. 15.* Of the Wounds of the Abdomen.

*Book. 4. P. 1. Sect. 2. Chap. 1.* We treated of the Wounds of the Womb.

### Chap. 23. Of the Diseases, and Symptoms that happen unto Wounds.

And now, since that it often happeneth that other Diseases, as likewise divers symptoms do happen unto Wounds, and follow upon them; (al which yield forth peculiar Indications, and so draw the cure to themselves; deject and weaken the strength of the Patient, and render the Wounds very difficult to be cured, and dangerous) we ought therefore to treat of those also; and to shew you how and by what means they are to be removed and taken way; until which be done, no Cure of the wound is to be expected.

#### Of Feavers.

And indeed in the first place, it happeneth very often that Fevers follow upon Wounds. And therefore although I have already treated of Feavers in a peculiar Tract by its self; yet nevertheless, in regard that it much concerneth us to know, and rightly to understand the differences of Feavers that follow upon Wounds, (that so we may the better remove them) we will therefore herein this place speak something of them inspeciall, and particularly.

And therefore, first of al, we are diligently to inquire what the nature of this Feaver is that followeth upon the Wound, and what the Cause of it. For these kind of Feavers are very various; some of them being every day Feavers, having their Original from the great disturbance of the spirits, and the boyling heat of the blood; by reason of anger, Fear, and upon all occasions of the humors being disturbed by the motion of the body, or the commotion of the Mind. And moreover also, Secondly, these feavers happen while the Pus (and especially if there be great store of it) is in breeding, according to that of the 47. *Aphor.* of the second *Sect.* Thirdly, from an Inflammation; Fourthly, and sometimes these putrid Feavers are likewise generated from the putridness that is in the wounded part. And fifthly, from the store of the vitious humors.

*The first kind of feaver from the disturbance of the humors.*

The first kind of Feavers invadeth the Patient at the first in the very beginning; and (as I told you before) it proceedeth from the passion of the mind, and the motion of the body, and the disturbance of the blood and spirits following thereupon. And hitherto also belongeth most vehement pain, which by disturbing the humors, and causing restlessness, may both set on fire those humors, and the spirits, and likewise excite a Feaver. *Their*

*Their Signs.*

Now these Feavers are known by this, that they invade the wounded person instantly upon the inflicting of the Wound, and together with it. But yet notwithstanding because that the putrid Feavers may likewise sometimes invade the person immediately, and even from the very first beginning; therefore by what Signs these *Ephemera* or every day Feavers may be discerned from the putrid, we have told you before; and the difference will sufficiently appear from what we have written hereof, in our first Book of Feavers, and sixth Chapter.

*Prognosticks.*

And the truth is, these Feavers of themselves bring with them no danger at all unto the sick person; and yet Nevertheless, neither can they at all promise any safety unto him, seeing that then the time of the fluxion and Inflammation; that are wont to follow upon the Wound, is not as yet overpassed and gone.

*The Cure.*

But now this Feaver requireth not any peculiar Cure; but (if the Patient will but only submit himself unto the strict Rules of Dyet) soon vanisheth of its own accord. But yet nevertheless all the Causes thereof (if they be yet present, or that there be any fear of their returning) are to be removed: for otherwise they may easily draw upon the person some kinde of danger. And in regard that otherwise (about the fourth day) Inflammations and fluxions are wont to happen; these Feavers, if they continue so long, (as until the said fourth day) may possibly attract and augment those Evils.

*A Feaver from the generating of Pus:*

And then again, while the *Pus* is in breeding, (and especially, if there be a great abundance thereof generated) Feavers are caused; as Hippocrates telleth us, in the 2 Aphorism. Sect. 27. For then, whatsoever over aboundeth in the wounded part, and cannot be changed into the substance of the part, beginneth to putrefie, and there is caused (as it were) a certain kinde of boyling forth of putrefied matter. And yet notwithstanding Nature doth what lieth in her power, and what she is not able to turn into the substance of the part, she doth what she can so to work and frame it, that it may not be altogether corrupted, but most of it turned into *Pus*. And therefore from this Ebullicion or boyling there is indeed a heat of the blood in the Veins and Arteries communicated unto the Heart, which when it is thither come it kindleth a Feaver, that is like unto an *Ephemera* (of many daies) rather then to putrid Feavers properly so called.

*Signs.*

And therefore the Signs of Putridness are absent, and appear not, (and so likewise for the Signs of an Inflammation) and these Feavers invade the wounded person at that time wherein the *Pus* is wont to be generated; and especially about the fourth day. The heat is much, but withall sweet; the pulse great, swift, and frequent. The Urine differeth and recedeth but little from its Natural state; and there is no ill and dangerous Symptom Joyned together with it, to accompany it.

*Prognostick.*

This Feaver of it self hath no danger at all in it, but soon after ceaseth.

*Cure.*

And this that it may so much the sooner be done, there is a passage forth to be made for the *Pus*; and this so much the more speedily, if the *Pus* be contained in a more noble part, or in a part that hath consent with some one of the more principal and noble parts: and withal we are to endeavour that all the afflux of the Humors may be hindered and prevented.

And Thirdly, Feavers are sometimes kindled from the Inflammation that followeth and happeneth unto the wounded part; sometimes Quotidians or every day Feavers; and sometimes putrid Feavers; even according as the Spirits Wax hot, and this heat is communicated unto the Heart; and also according as the putrid Vapours transfused into the Veins and Arteries do penetate unto the Heart, and heat it.

*Signs.*

Now these like Feavers are known from the Signs of an Inflammation; touching which we have spoken in the first Part, and 3. Chapter. But whether the Feaver be a Quotidian, or a right putrid Feaver, this may be known by the Signs of them both; of which we have likewise already spoken in our first B. of Feavers; and especially, that in the Quotidian the Signs of putridness disappear in the Urine, whereas in putrid Feavers they appear therein. And so the heat in putrid Feavers is far greater and sharper, then in Quotidians; and so are also the Symptoms more grievous; and withal there is a greater dejection of the strength and powers of the Body.

*Prognostick.*

Now these Feavers in regard that they wholly depend upon the Inflammation, they are therefore greater or less, according to the greatness of the inflammation; and so likewise more or less dangerous.

*Cure.*

These Feavers are taken away and Cured, upon

on the removal of the Inflammation, like as all other Symptomack Feavers; touching which we have already spoken in their proper place. And therefore we ought in the first place to do our endeavour, that by coolets and other convenient altering Medicaments this Feaver may be Cured; lest that otherwise a putridness be excited in the Humors; or if there be now already present any putridness, that it may be restrained and kept under.

*Feavers from the putridness of the Humors:*

And Fourthly, There happen likewise feavers unto Wounds, kindled even by the putridness of the Humors that are in the Wound itself; as being neerly related and allied unto those things that are raised and have their rise from the Pus or thick purulent matter.

#### Signs.

Such Feavers as these are known from the Quantity & quality of the Excrements of the wound. For there floweth forth great store of Sanies, and this resembleth something that is putrid, rather than good & laudable Pus; and it is of a various and evil colour, and of a very unsavoury and offensive smel. And although there should not flow forth any great store of Pus or Sanies; yet nevertheless if the matter that floweth forth be naught and corrupt, if the colour of the part be changed, and if there be present any pain and heaviness in the part, it is then indeed a sign and token that there is present a vitious matter, and that it hath not been sufficiently purged forth. But in the mean time there will be present, and appear, the signs of a Feaver, which will shew unto us in the Urine the Notes and Marks of putridness; or it may be they shew us none; according as the matter is more or less communicated unto the Veins, and Arteries.

#### Prognostick.

And as for these kinde of Feavers, they are more or less dangerous, according as the putridness is greater or less; and likewise as it is in a part more or less noble, and accompanied with more milde and gentle or else more sad and grievous Symptoms; and according as there may be made a passage for the more easie or more difficult flowing forth of the vitious matter.

#### Cure.

The Cure consisteth in this especially, that the putridness in the part affected be with all speed, and as much as may be, restrained and kept under, and that by all means possible there be a way and passage made for the vitious matter to flow forth. For the putridness being taken away and removed, the Feaver soon after easly vanisheth of its own accord.

And Lastly, There is also a kinde of Feaver, which ariseth (in wounded persons) from the storing up and the great provision that hath been made of vi-

*A Feaver from the vitious preparation of the Humors.*

tious and naughty Humors, and the ill preparation of them. For if the wounded Body be impure, it may then easly be, that a Feaver may be kindled in it upon the occasion of the Wound. Now this is done in a twofold manner, and upon a double account. First of all, from the commotion and disturbance of the Spirits and Humors, after the receiving of the Wound. For as in Bodies otherwise impure there are Feavers oftentimes kindled from the passions of the minde, and Commotion of the Body, (even as we see it to befall Women that have hard labour in Child-bed) so the very same may likewise happen in those that are wounded. And furthermore a Feaver is also kindled from a putridness in the wounded part. For as in Child-bearing Women there are Feavers oftentimes kindled from the retention of the Secundine, and the blood that usually floweth from them after the Child is born; (and this so much the more easly, if their Bodies be impure) even so if any putridness be kindled in the wounded part, and that the depraved Vapors communicated unto the Veins do finde any vitious Humors in these Veins, then a Feaver ariseth thereupon. Now these Feavers are various, (according to the different preparation of the vitious Humors;) sometimes intermitting, and sometimes continual; according as this treasury of the vitious Humors is laid up either without the Vena Cava (viz. the great hollow Vein) or else sticketh fast in the same; and indeed for the most part they are Tertians either continued or intermitting, (single, or double) and very rarely Quotidians; and most seldom, Quartans.

#### Signs.

These Feavers are known, in that both the heat, and the Urine, and the pulse, do all of them discover sure signs and tokens of a putridness. But now whether these Feavers are kindled only by the commotion and disturbance of the Humors, or else from the putridness in the wounded part, it is known by this, to wit, that if the Feaver proceed meerly and only from the Commotion of the Humors, then such a Feaver invadeth the person immediatly and in the very beginning; and there is no vitiousness or fault at all to be found in the Wound. But if it proceed from any putridness in the Wound, then the Feaver appeareth not instantly, and at the very first, but after a short time; and then there are Signs and tokens of Putridness in the Wound



Wound it self. But then for the Nature and Quality of the Feaver, it is to be known from the proper Signs of Feavers.

*Prognostick.*

Of these Feavers, some of them are more dangerous then other some, as we have already told you before, in its proper place, touching Feavers: and intermitting Feavers they are of themselves altogether void of danger; but the Continual are somewhat more dangerous; and that likewise more or less, according to the quality and condition of the putridness. But yet because that these Feavers happen and follow upon Wounds, they al of them therefore bring some danger along with them, more or less. For whereas the wounded part was weak before, now the Feaver happening thereupon increaseth the debility, and so augmenteth the danger thereupon depending; and thus it may very easily come to pass, that at the part affected there may be a fluxion excited; or else by reason of the heat weakened upon the afore-said Cause very many Excrements may be generated in the part, and from hence other evils may be excited.

*Their Cure.*

Now as for the Cure of these Feavers; albeit that they are occasioned by the Wound; yet nevertheless because that the vitious provision of Humors is the principal cause of them, therefore these Feavers are to be cured in that manner we told you of in its own proper place.

*Touching the Inflammation.*

Now very often there happeneth unto Wounds an Inflammation; and sometimes likewise an *Erysipelas*. And indeed an Inflammation doth most commonly (if not evermore) follow upon the inflicting of a Wound; and more especially in the Nervous parts; in regard that the afflux of Blood unto the part affected stirreth up and causeth a pain therein; and moreover, because that the Blood when it cannot sufficiently flow forth from thence it putrifieth, and very easily exciteth an Inflammation, which is prevented by a due and sufficient efflux of the Blood; touching which *Hippocrates* thus writeth, in his *B. of Ulcers*.

*If there flow forth of the Wound Blood more or less, according to the strength of the wounded person, then both the Wound it self, and those parts that are neer about it are the less troubled and affected with any Inflammation that shall follow upon the Wound.*

And therefore if there be any cause to fear an Inflammation; and if the blood hath not sufficiently flown forth, then forthwith a Vein is to be opened in the opposite place;

and the Blood is to be evacuated according to the strength of the sick person, and as he is well able to bear it. Yea and moreover, if there be already present an Inflammation, and that the Patients strength will bear it (and necessity so require) Venesection and Purgation are both of them to be administered, according as there shall be need.

If the Inflammation be excited from pain, then we are to endeavour that the said pain be taken away, and withal that the afflux of Humors be repressed. *Avicen* for this use highly commendeth the Cataplasme that is made of the *Pomegranate* boyled in astringent Wine, then bruised in a Mortar, and so made up into the form of a Cataplasme. There may likewise a Cataplasme be made of the meal of *Barley*, of *Sea-lentils*, *Mousse Ear*, and *Oyl of Roses*. But if the Inflammation be not removed by these, the rest of the Cure is then to be performed, as we shewed you before in the first Part, Chap. 5. Touching an Inflammation.

*Of the Erysipelas.*

If an *Erysipelas* follow upon the Wound, this will soon appear from those Signs that we gave you in the first Part, and 7. Chapter, touching an *Erysipelas*. And in what manner it is to be cured, is manifestly declared by those things that are there spoken of. And the truth is, *Hippocrates* (in his *B. of Ulcers*) teacheth us, that whensoever an *Erysipelas* shall follow upon an Ulcer, that then the Body is to be purged. And indeed, if it be so that Choler abound, (lest that there should be an afflux thereof unto the Wound) it will be very expedient wholly to evacuate the same. And yet notwithstanding, because that the *Erysipelas* (which we call *Rosa*) hath its original rather from the thinness of the Blood, and that part of it that is peculiarly corrupted; Sudorificks are therefore most especially useful, as there we told you. *Hippocrates* was wont to impose upon the part affected the Leaves of *Woad*, or the Juice thereof with Clay. We may likewise apply unto the place affected Cataplasms of *Barley meal*, and *Eldern Water*, and other the like, such as we have there mentioned, to wit, in the place before alleadged.

*Of the Super-excreſcent Flesh.*

And sometimes likewise it so happeneth, that the Flesh becometh Luxuriant and proud (as we term it) and groweth forth beyond all Reason and measure; which hindereth the production of the Cicatrice, and its covering over of the Wound; or at least it causeth the same to be unsightly and deformed. But this happeneth through the unskilfulness

or want of care in the Physician, who administred Medicaments that were not sufficiently drying. And therefore what Flesh we finde to be superfluous we must take it away, that so the Wound may be shut up with a Cicatrice.

But now this is the work of the Physician, who is to consume the superfluous Flesh with Medicaments that are sufficiently strong in their drying, cleansing, and (if need so require) somewhat Corroding likewise.

But now what those Medicaments are with which this may be done, we have told you before, in the 2. Part, and 7. Chap. whether we refer you. Of all which Medicaments there mentioned the most useful and principal is the Green Water there spoken of; which both consumeth the superfluous flesh, and likewise bringeth the Cicatrice over the Wound when it is cured.

### Of the Hæmorrhage.

There happen also many Symptoms unto Wounds; which partly deject the strength of the Patient, and partly render the Curing of the Wound more difficult then otherwise it would have been. And first of all, there oftentimes happeneth indeed an extraordinary great Hæmorrhage and profusion of the Blood; which doth not only deject the strength and Spirits, (depriving the Patient oftentimes of his Life) but it likewise very much hindereth the Cure. For so long as the Flux of Blood lasteth, there can nothing at all be done in the Cure. Now that said Hæmorrhage happeneth upon the wounding of the greater Veins, as also the Arteries, not only the greater of them, but the mean and middle sort of these Arteries. But touching this Symptom we have already spoken above in the 14. Chapter. where you may see further.

### Of pain with the Wound.

And oftentimes likewise there is an extraordinary vehement pain following and accompanying the Wound. For although there be indeed hardly any Wound without pain; yet nevertheless very usually this pain is tollerable, and such as the Patient can well bear. But sometimes it is vehement and altogether intollerable: which happeneth more especially, when the Nerves and the Nervous parts are hurt and Wounded: and an extreme vehement pain arising immediatly upon the inflicting of the Wound is a sure and certain Sign and token that either a Nerve or a Nervous part is wounded.

#### The Cause.

Now this pain is excited in Wounds, som-

times by reason of Errors committed by the Patient in the Course of his Dyet while he eateth all manner of bad and corrupt food; as Cabbage and Cole-worts, salt Fish, Swines flesh, or the like; while he exposeth the wounded part unto the cold Air, and moveth it overmuch by exercise. And sometimes also this pain happeneth by the Carelessness of the Chirurgion, who administred Medicaments that are overhot, and too sharp; bindeth the part too hard and streight, placeth it not aright, thrusteth into the Wound Tents over long, or thick; leaveth the Pus over long in the Wound, and suffereth some piece of bone to prick and molest the part that lieth next unto it. And sometimes also, without any of these Causes, a pain may be excited by an internal afflux of the Humors; and this pain oftentimes invadeth the wounded person suddenly, and with a certain unwounded coldness and Chiliness; and this is oftentimes a very shrewd sign of some great Inflammation instantly to follow, or even of a Gangrene very nigh at hand; and this especially, if together with the pricking pain there be perceived a certain heat in the Wound.

#### Prognosticks.

Now these extraordinary and over vehement pains in Wounds are wont to be the Causes of grievous Evils. For besides that they cause a restlessness and want of sleep, and deject the strength of the sick person, they are likewise the Causes of the afflux of Humors unto the wounded part; whereupon Inflammations, a Fever, sometimes also the Gangrene, are excited and brought upon the party. Touching which Galen also very frequently giveth us notice. There is nothing (saith he) that more increaseth the Phlegmone then pain; as he writeth in his 3. B. of the Meth. of Curing, and 4. Chap. and in the 3. B. of his Method, Chap. 2. and 6. By reason of pains (saith he) the parts are troubled with and lie under fluxions. And in the 13. of his Method, Chap. 5. Pain, and the heat of the member in which the Erysipelas resideth (although the whole Body be pure and free from Excrements) become the Causes of a Fluxion.

That therefore the pain may be taken away, we are to make diligent enquiry, and finde out, whether this pain proceed from any Errour and fault in the sick person, or else from the Carelessness of the Chirurgion: and if any such Cause shall be discovered, it is to be removed before any thing else be done. But if no such Cause shall appear, but only that something extraneous sticketh in the Wound, this is without any delay to be drawn forth. If the pain proceed from the

abundant store of the Pus retained and kept in; then a free and open passage is to be made for it that so it may freely flow forth. But if it proceed from the overgreat Afflux of the humors (like as it is wont to be in an Inflammation) then we are to make use of those Medicaments that restrain the immoderate & excessive afflux of the humors; as also we are to administer Medicaments both rarifying and Anodyne. And very useful here is the Oyl of *Roser* with the white of an *Egge*, and the yelk of an *Egge* (according as the Case shall require) and in which *Earth worms* have been boyled: as likewise the Oyl of *Camomile*, of *Linseed*, of sweet *Almonds*, of *Earth worms*, and of *Elder*. A Cataplasme of the *Leaves* of *Mallows*, the *Roots* of *Marshmallows*, *Barley meal*, *Bean Meal*, and bran. But if the pain be greater then ordinary, we may then make use of the Oyl of *Poppy*, and of *Water-Lilyes*; as likewise of the Cataplasme that is made of the *Leaves* or *Root* of *Nightshade*, and *Hoggs grease*. As for Examples;

Take Oyl of sweet *Almonds*, Oyl of *Roser*, and of *Camomil*, of each one ounce; the yelk of one *Egge*, and *Saffron* half a scruple, Mingle them &c. or,

Take *Root* of *Marshmallows* half an ounce, *Mallow Leaves* one handful; *Elder flowers* two pugills; boyl them all unto a softness, and then pass them thorow a bayre sieve, adding unto them the powder of *Camomile flowers* half an ounce; *Barley Meal* one ounce; *Bean Meal* and the *Meal* of *Linseed*, of each half an ounce; Make a Cataplasme hereof. Unto which (if you please) there may be added the Oyl of *Roser*, of *Camomile*, of white *Lilyes*, of *Mastick*, and the *Unguent Dialthea*.

If the pain be not asswaged by all these Medicaments, it is a sign that some Nerve is greatly hurt. And so then the cure ought in all respects to be carryed on, as that we mentioned above in the 15. Chapter touching the wounds of the Nerves.

### Of Convulsions, and Convulsion Fits.

There happeneth likewise now and then a very grievous and dangerous symptom unto Wounds; to wit, a Convulsion, or Convulsion Fits, (the *Latines* term them Convulsive motions) touching which symptom many are wont to treat at large, touching Wounds. But in regard that we have already (in the first Book of our *Praxis*, Part. 2. Chap. 20.) spoken enough of a Convulsion in general; we shall here only set before you those things that are proper unto

that Convulsion which is wont to follow upon Wounds.

#### Cause.

As for the Causes of the Convulsion; Convulsions are caused in Wounds, either from a pricking of the Nerves, and their extreme vehement pain, or else from some sharp and Malignant, either humor or vapour, pulling and twinging some Nervous part, or the Membranes of the Brain: for the expulsion of which when Nature beginneth to bestir herself, she then excite this Contraction, and Convulsive Motions. Touching which *Hippocrates* (in his 65 Aphorism of the fifth Sect.) thus writeth: *Those* (saith he) *that together with their Wounds have conspicuous Tumors, these are not greatly troubled with Convulsion fits, but they are taken with a kind of Madnesse.* But these tumors suddenly vanishing (if this indeed happen on the hinder part) then Convulsions and Cramps follow thereupon. And *Galen* (in Art. Medica, Chap. 92.) saith, that the pricking of a Nerve and Tendon, (by reason of the vehemency of the sense, and because this part is knit together with the principium, (that is, the Brain) it is therefore very apt to excite and cause a Convulsion of the nerves; and then especially when nothing breatheth forth outwardly, the wound of the skin being closed and shut up.

And indeed the matter exciting a Convulsion doth it sometimes only by its Acrimony, and sometimes also by its malignity; like as we see the very same to happen in Wounds and strokes, and bitings of venomous Creatures.

#### Prognostick,

Now these Convulsions or Convulsive Motions are very dangerous in wounds; touching which *Hippocrates* (Sect. 5. Aphor. 2.) saith thus; *The Convulsion that followeth upon a Wound is Mortal.* and in the 5. Sect. Aphor. 3. *The Convulsion that followeth upon an extraordinary Flux of the blood, (or a sighing and sobbing upon the same occasion) is very evil and dangerous.*

#### Cure.

But now, as for the manner and method of Curing these Convulsions, we have shewed it unto you, in our 1. B. Part. 2. Chap. 28 and there you may see enough hereof. And therefore here in this place we shall only give you notice of these things following. First of all, that in Convulsions and Convulsive Motions that happen unto Wounds (whether it be of themselves, or by Consent with some other part, how and in what manner soever it be) we ought to have a special regard unto the Brain, Spinal Marrow, and the Nerves that proceed from these; and thereupon we are to anoynt the Neck (both



before and behind) and the whole spinal Marrow, with Convenient Medicaments; such as we have already mentioned in the place alleadged. *Cæsar Magatus* (in his first B. Chap. 77.) Commendeth this following.

Take Oyl of Bays, of Juniper Wood, of Juniper Berryes, Mans Fat, and Oyl of Earth Worms, of each four ounces; Oyl of Rosemary flowers, Lavender flowers, and Sage flowers, of each two ounces; Oyl of Peter, and of Turpentine, of each half a pound; Oyl of Tile, and the oyl of Been, of each three ounces and an half; Myrrb, Frankincense, Ladanum, Benzoin, and Gum Juniper, of each three ounces; Oyl of Cinnamon, of Cloves, Mace, Nutmeg, of each one ounce and half; Bdellium two ounces: Ammoniacum, Opopanax, Galbanum; of each one ounce; Indian Tacamahaca, and Caranna, of each four ounces; Castoreum, and Saffron, of each six drams; the Root of the herb Masterwort. Angelica, Valerian, Acorns, Costus, of each half an ounce; Fat styrax Calamite one ounce and half; the fat of a Lion, and Bulls fat, of each two ounces; the best burning Water one quart; and mingle them wel together.

And Lastly, if the Convulsion happen from the Retention of the Pus or other excrements; then we are to endeavor that by all waies and means a passage forth may be made for both the thin and thick excrements and that there may be some liquor drop into the Wound that hath in it a power and virtue to cleanse and consume. And outwardly also there ought somewhat to be imposed that hath a power of drawing from the depth and bottom of the Wound; which kind of Medicaments may sufficiently be known from what we have written before, and more especially, touching the Wound of the Nerves.

Chap. 24. Whether it be lawfull for a Christian by Amulets, (the Greeks call them Periapta, we Preservatives) or else by hanging of Seals about their bodies, or by the like means, to defend and preserve themselves from all danger by Weapons?

Since that there is nothing now a days more frequently practised by Soldiers, then by certain Amulets (or Periapta) as also by Seals and Characters, to fence and Guard themselves against all thrusts and Strokes of Weapons, and Gunshot, (and so to render

themselves altogether inviolable; ) before we end this discourse touching Wounds, we think it not amiss (for a Conclusion) to add and discuss this question; whether it be lawfull for a Christian, and whether he may with a safe Conscience, (and without breach of Piety) in any such manner as aforesaid make his body weapon-proof, and impenetrable by Gunshot.

For although I neither desire to make any inquiry into the secret and private practises of these kind of Persons, nor think it worth the while so to do; yet notwithstanding this is a thing very well and commonly known, that these men cannot Guard and fortify themselves from all kind of violence whatsoever; but only against the thrusts and strokes of Swords, and other the like Weapons, as also from Musket and Pistol bullets, so that such like Weapons, and smaller Gunshot shall not by any means be able to penetrate their skin. But yet these persons may by Clubs be dry-beaten, and by bullets shot forth of the greater Guns (as Ordnance, and the like) be hurt and violared; yea they may hereby likewise be destroyed, although it be true, that their skin cannot easily be wounded. Yea moreover (even as themselves confess) there are some certain parts that cannot thus be safe-guarded and preserved impenetrable and inviolable; and more especially their Eyes. And moreover this is likewise commonly reported, that some of them can make not only themselves, but that they can render even the bodies of others so impenetrable and inviolable, that they shall not be hurt by any kind of Weapons; yea that some of them are able to cause, that butter shall not be cut, either by knife, Sword, or by hatchet. And thirdly they report this also that such as are altogether ignorant and unwitting unto any such practise, may likewise by others be made inviolable, and proof against all kind of Weapons and Darts.

But now they have divers waies &c means of making themselves thus impenetrable and weapon proof, which I neither know nor desire to know. In the general, I shall only acquaint you with one or two of those things that are commonly carried about by them; that so by them you may likewise know how the better to Judge of all the rest. And first of all, it is scarcely unknown to any, that there are certain Seals or Pentacula (as they call them) that are graven with figures and Characters, and ignorantly lettered (as *Apuleius* speaketh) and these are carried up and down, and by the Souldiers hung

The various waies and manner by which some make themselves impenetrable by weapons.

hung about their Necks; and they are wont also to be bound unto their Body; that so by them they may render themselves inviolable, and not to be hurt by any Weapons. And some there be, that only inscribe these kind of Characters upon a piece of paper, and so hang them unto their Bodies. And I myself knew a man, who reported that he hung one of these sheets of Paper about the Neck of a Dog; and then he shot him close at hand with a bullet out of a hand-Gun, and yet the Dog was not at all any whit hurt thereby. And there are some likewise, who swallow down these sheets or pieces of paper thus Figure'd and Character'd. And there is extant in a certain publique writing an instance of the like Artifice (if we may so call these delusions and impostures of the Devil) by which a certain Gentleman fenced and guarded his Body against all kinde of Weapons. Which practise of that renowned Commander (that so valiantly and successfully fought many battles against the Turks, in the behalf of the Christians in *Hungary*) whether it make more for his praise or dishonor, I leave it free unto any one to Judge thereof. I shall only say this, that oftentimes even great persons (Princes and worthies) have been deceived in this kinde, and have too incautiously given Credit unto these Cheaters and deceivers (who go up and down selling these things, and oftentimes putting them off at very dear rates) and have not sufficiently weighed and considered the dangerous consequence of what they go about. And therefore, as for the Course that these men take (seeing that it is altogether superstitious & impious) I do not think it any waies fit for me by my writings to propagate it unto Posterity: and yet notwithstanding, that the superstition and wickedness of this practise may appear, I will in the general speak somewhat thereof, and delineate it in some particulars. At the sacred time of our Saviours Nativity (or as we call it, Christmas) about midnight in a sheet of Vellom or Parchment there are these letters inscribed. I. N. R. I. and this same sheet of Parchment is closed up in certain bales or Lumps of Wheaten dough, which are privily put upon the high Altar, that so at certain and divers times three Masses may be celebrated over them. And then one of these little balls (with certain superstitious prayers they have for that purpose) must be eaten in the morning; and this wil for that day preserve the man safe and sound from all kinde of Wounds whatsoever.

In the same little Book, (the writing before mentioned) we are taught, in what manner on the day any wound is inflicted, before Sacrificing; the Moss is to be taken and shaved

from the Skul of one that was hanged or broken upon the wheel, (and this with certain prayers) which if sewed into the Garment under the left Arm-pit, and worn, will in like manner preserve the man inviolable, and not to be hurt by any Wound.

And there are some also who Wound their Skin; and then they put upon the Wound these kinde of Parchments, or some other things Character'd (as before) and so they Conglutarinate the said wound, and close it up. And there are likewise (without doubt) many other such like waies and means well known to Souldiers; in the discovery of which I intend not at all to be Curious, or in the least to trouble my self.

*The Authors of this practise.* If enquiry be made after the Authors of these Diabolical Practises, the prime and chief of them are for the most part unknown; and these things are by the incautious Souldiers derived from one to another, and from hand to hand. And if we should trace the Authors out even unto the very first of them, we shall finde the first Author hereof was (doubtless) some Devil and wicked Spirit, as we shall anon shew you. They do acknowledge that oftentimes hang-men or the common Executioners are the Authors of this wicked Artifice, as being a generation of Men for the most part much addicted unto Magick. And so the *Passavian* Att (as they call it because that it first came to be known in that Army which being raised about *Passavium* afterwards in the yeer 1611. brake into *Bohemia*, & took *Prague*, and was every where divulged up and down the Country, and throughout *Germany*) at the first was communicated and made known unto the Souldiers by the common Executioner of that place.

If you enquire into the reason hereof; they first of all pretend experience, and they alleadg likewise great persons Princes and worthies, who have by their Experiments found the truth hereof, and so have left it unto us as a *Probatum*, that any one may in this manner and by this means render himself inviolable and so as not to be hurt by any kinde of Weapons. And moreover, some there are that derive the virtue and Cause of this effect from the Constellations; and therefore it is that they teach us to make those Seals (which they call *Periapta* and *Pentacula*) under certain Constellations.

But in very truth, we deny not this indeed, that such things as this may thus be done, and that they have been made use of by great persons, (Princes and others :) but the Question is now touching this, whether such like practises as these may be wrought by any Natural means; and whether a Christian Man

Man or Woman may lawfully and without Impiety in this manner render himself inviolable and impenetrable; or else whether or no whatsoever shall be done in this kinde be not done by Magick and the Diabolical Art; and by a compact with the Devil; and so therefore that it is altogether unlawful, impious, and wicked, for any one in this manner to make his Body impenetrable.

*Thus to do  
simply un-  
lawful:*

In which Question we indeed defend the latter opinion; and we positively asserit, that all the power, virtue and efficacy of the Means aforesaid proceed from a compact and agreement with the Devil, and so consequently from the Devil himself; and thereupon that he (whosoever he be) that shal by this kinde of Means endeavour to fence and guard his Body against the violence of Weapons, shall by thus doing attempt a thing altogether impious and unbecoming a Christian.

*Reasons pro-  
ving the un-  
lawfulness of  
this Practise:*

For First of al, most certain it is, that there is no such virtue either in Metals, or in sheets of Paper or Parchment, of themselves and in their own Nature; but that they perform whatsoever is done, as they are marked with the aforesaid Characters. But now there can be no such virtue or efficacy in Figures and Characters: and therefore it will necessarily follow, that it proceedeth from some higher power; and this must beeither from God, and the good Angels; or else from the Devil, that wicked Spirit. But it is no where extant in Holy Writ, that ever God did (either by himself, or the Ministry of the good Angels) work any such thing; or that he ever promised so to do. And who is there that can beleeve, that such an abuse of sacred Words, and other such like superstitious practises as have been before related, should be approved of by those good Angels: and therefore we must beleeve that they proceed from the Devil. And thus the Devil that he may seduce and withdraw men from the Worship and Service of Almighty God, and devote them unto himself, he maketh an Agreement and compact with any one that will hearken unto him, that if he wil forsake God, and become his, he will then make him free and inviolable from the violence of all Weapons whatsoever, so long as he shall carry about him such like Seals (or *Periaptas* as they are commonly called) or shall devour the aforesaid Characters inscribed upon Paper. Unto which Compact they render themselves Obnoxious, and give their Consents, who ever they be that make use of the above mentioned Characters. For those Characters are the Devils Alphabet (if I may so term it)

and as it were the Military pawn and Engagement by which he knows and acknowledgeth them, when they implore his help and assistance. For albeit there are some who here conceive themselves to be altogether free from all Idolatry, superstition, and impiety, and that they have herein no compact nor commerce with the Devil; yet nevertheless they are herein greatly deceived, so long as they make use of Means that were never ordained by God, but such as are of the Devils Institution.

For there is a twofold compact with the Devil, to wit, Mediate, and immediate; or explicite, and implicate. The immediate and explicite is, when any one shall make use of means immediately delivered into his Hands by the Devil himself. But the Mediate or Implicate Compact is then, when any person shall make use of such means as were at first prescribed by the Devil, but yet such as he hath not received immediately from the Devil himself, but hath had them by others and from Hand to Hand delivered unto him. Both which we finde forbidden, and contrary to the Law of God, which forbiddeth us to have any other Gods. Neither is it any whit to the purpose, that which many object, when they say, that it is no way probable, that compacts which others have entered into with the Devil, the guilt thereof should become theirs, and bring them under the like impiety; seeing (saith they) that it is the consent of the Covenanters that makes the compact: for in that Compact implicate or Mediate (as I have said) the consent is not altogether wanting. For whereas every one that hath but so much soundness of minde yet left him (*that he knows how to shun Rocks and avoid the pit that stands wide open, and ready to devour him*) will easily acknowledge, that those Characters or Words have no such virtue in themselves; and therefore before ever he make use of them he ought to inquire, by what power and virtue it is that they perform what they do. Which if he neglect to do, he then implicitly enters into a compact with the Devil, who hath made that promise that he will perform this for such as shal make use of those Characters and form of Words according to his prescription; and so consequently such a one cannot at al be free from impiety. And that this is a truth those two Histories following will sufficiently make good. *Martinus del Rio* in the 2. B. of his *Magic. Disquisition. Quest. 27. Sect. 1.* relateth of *Henricus Cornelius Agrippa*, who having at *Lovain* a youth boarding in his House that was over curious and prying, it so came to pass, that during this

*A Compact  
with the  
Devil twofold:*



this youths abode with him, *Agrippa* having at length occasion to ride a Journey far from his home, he delivered the keyes of his Study unto his Wife (whom he afterward put away by divorce) with this prohibition and charge that she should not suffer any to enter thereinto in his absence. But this youth having by his importunity and earnest intreaty gotten leave to go into the study, and lighting upon a little Conjuring book, while he was reading therein, lo a knocking at the Study door; but he persisting stil in his reading there is another knocking heard at the Study door, which the youth still reading on and not answering, the Diel entereth in, and asketh wherefore he was called; at which the youth being astonished and so far affrighted that he could not make any ready answer, the Diel immediately choaked and strangled him. For as he that readeth any thing in an unknown Language, he himself haply may not understand what he reads which yet one that standeth by may understand; so it was here; although this youth knew not that he called for the Devil; yet notwithstanding the Devil wel knowing his own watch-word, and the engagement or Compact he had entered into, soon came upon calling.

The other History we have related by *Henricus Brudus* ( in the *Miscellanies of Smetius*, B. 5. *Epist.* 17. ) which he tells us that he received from *Doff. Nevius*; and that the truth of this History was there confirmed by many of the Citizens. At *Leipswich* a little Girl not understanding what she did by reason of her Childishness and want of Age, whilst she was imitating all the Actions carriage and behavior of her Nurse ( which she had seen her oftentimes use in the raising of storms and tempests ) causeth thunder and Lightening, by which a village not far distant from this City was set on fire. The little young Girl being brought before the Senate, it was there with much deliberation debated whether they might legally proceed against her. But it was decided by the opinions of all the Counsellors there present, that they could no way proceed against her, neither punish her, by reason of her nonage, and ignorance of what she did. Which History doth sufficiently teach us that any one may even unwittingly, incautiously, and almost without his consent, cast himself into such a like compact with the Devil. For when as the aforefayd Girl ( although by reason of her tender Age she understood not what she did ) made use of those Ceremonies that were delivered and prescribed by the Devil unto the Witch her Nurse; the Devil was presently ready at hand, according to

the Compact betwixt them ) and rayfed the aforefayd Tempest. Which if any one of a riper age ( which might easily understand, that in these kind of Ceremonies themselves there can be no such power and virtue ) had done, such a one ( without doubt ) had not been acquitted by the Counsellours, nor gone unpunished by the Senate. And therefore we conclude that there is none ( unless he be out of his wits ) that wil make use of the means aforefayd; seeing that he may easily understand that such like Ceremonies, Words, and Characters, do not perform those things they are sayd to do, either by any Natural power and virtue of their own, or else by any power given them from God, or the good Angells, but that they have this their power from that wicked spirit. And he whosoever he be that shal make use of them cannot be acquitted and freed from gross impiety, Magick, and Idolatry.

But whereas there are some that endeavor to derive these virtues from the Constellations; ( and therefore teach how to make divers of these Seals under some certain position of the Stars; we are therefore in the next place to examine that opinion also.

And the very truth is that among all the Seals of *Arnoldus de villa Nova*, and of *Paracelsus* ( in his *B. Archidox Magic.* ) there is none at all to be found that wil render a man inviolable, and so as not to be hurt by any kind of Weapons; and therefore this invention of the Devil seemeth to be newer and since their times. But now in regard that there is one and the same reason for all those aforefayd effects ( that are promised from these kind of Seals ) we conceive it therefore very fit to speak something, in the General, touching the aforementioned Seals. For if we shall ( in the general ) demonstrate unto you, that these Seales have in themselves no such natural virtue or efficacy, we shall thereby withall shew unto you, that these Seals likewise ( that are made use of against Wounds ) have not their virtue and power from the Constellations.

That under the name of Astrology such like Magical Trumpery should be exposed to sale, is no new thing; for it was of old thus wont to be done in the Eastern Countreyes. Touching which *Pliny* ( in the 30. B. of his *Natural History*, and *Chapt.* 1. ) sayeth thus. *Magick* that most fraudulent of all the Arts hath very much prevayled all the world over, and that now of a long time, & for these many Ages.

But

But indeed there is no cause why any should admire at this the so great authority of Magick: in regard that she alone of all the Arts, adding unto her self and comprehending within her self three other of the most famous and sovereign of them (and such as have the greatest command upon the mind of Man) hath reduced them into one only, to wit, her self alone. For first of all there is none that doubteth and that wil not readily grant, that she hath her birth and original from Physick, and that she so crept in under a fair and specious pretence of safety and health, as a higher and more sacred Art then Physick is self. And so hath she likewise by her blandishments and large admirable promises added unto her self the strength and power of religion; with which now a days mankind is so strangely blinded. And that she might the more easily suggest these her promises, she intermingl-eth the Mathematicall Arts; there being none that is not very greedily desirous to know things future as concerning himself; verily believing that these things are fetcht and brought unto him from heaven it self. And thus the senses of Men being possessed, and lying under a threefold Obligation hath increased and grown up unto so great a height, that even at this day it is very prevalent in most Nations; and in the East especially it hath a commanding power over such Kings as have Kings for their subjects. And I could heartily wish that the said superstition had there only had its residence and abode in the Easterly Countreyes; and that Monarchy there perishing, she had likewise perished together with it. But afterwards this superstition became propagated likewise into other Regions. For even Galen also (in his 9. B. of the facult. of simple Medicam. in his Chapt. of Stones, & the Jasp. telleth us that it was a very usual custome even in his days to engrave a Dragon upon the Jasper stone, and to set and wear it in rings for the comforting of the Stomack. And Alexander Trallianus (in his tenth B. about the end) writeth, that they were wont to carve upon the Jasper stone the effigies of Hercules standing upright, and killing the Lion; and this they set in a Gold ring, and wore it for the Curing of the Collick. And in the same place, he commendeth as a thing sacred and not to be communicated but unto sacred Persons, this Ring, against the Colick. On the seventeenth or the one and twentieth day of the Moon, he appoints us to take a Ring of Iron, and to make the Circle thereof eight-angled; and upon the Eight Angles to inscribe these words, *fuge, fuge, beu bilis: a'anda querebat.* And this Sign or Mark following, **N** he commandeth us to write upon the head of the Ring. And in his tenth Book, and Chapt. 1. against the Gout in the feet and toes, he commendeth

a thin plate of Gold, in which (the Moon then being in Libra or Leo) is to be inscribed that verse of Homer: *πρὸς ἄρ' ἀγρὰν ὕδατος ἰσχυρὰ χέρον γαῖα* And many more besides of this nature we likewise meet with very frequently in Trallianus. And Paracelsus hath also propounded very many of these like Characters, (in his Book *Archidox. Magic.*) And yet neverthe less he himself (in his B. of occult Philosoph. in the Chapt. of Characters) before all other Characters, Signs, Pentacula, and Seals, he preferreth two of them: one, that wherein (in a certain figure there is inscribed the name *Adonai* The other is that in which likewise (in a peculiar figure) there is inscribed the Tetragrammick name of God, consisting of five syllables. And he writeth that these seals are very useful and avaylable against all Devils and also against all Charms and enchantments, and that they perform things wonderful and admirable. And therefore again I wish heartily, and I would to God that the sayd superstition which hath had a commanding power over great kings in the East who have had even Kings for their Subjects, had not likewise born too great a sway over Christian Princes, Nobles, and great persons; or that there were not found to be such as sold unto these Princes & Nobles those Magical Charms and Spels under the name & pretence of Aströlogical Rarities: and likewise that these great persons would more diligently inquire into those preservatives when they are profered unto them: for they might easily find and discover that those things had not so much as any probability of Reason to ground upon. For although some have endeavoured to derive the cause of these effects from the Heavens; yet notwithstanding as for the manner how this is done, therein they agree not; neither do they bring any thing of probability to prove the same.

The Reconciler (Difference 101) from that of Ptolomy, (in his *Centiloquy*, that the faces of sublunaries are subject unto the Celestial Aspects, that is to say, the species of the Living Creatures of this inferior world are subject to the Celestial images,) concludeth and positively determineth, that the Celestial sign *Scorpio* hath the predominance over all inferior Scorpions, and the Serpent over all Serpents here upon Earth.

But grant indeed that it be so, (which yet Nevertheless they have no way proved) that these inferior Earthly Scorpions are subject unto the sign of the Scorpion in the Heavens; yet what is all this to the Scorpion carved and engraven upon the precious Stone? Certainly a Dog, or Scorpion, engraven or pictured, is not of the same kind, nor under the same Genus, with the living Creature,

Dog.

Dog, or Scorpion. There are others that say that this virtue is intilled into these Seals from Heaven and the Stars; and that the Astral Spirit that hath its influence and is sent upon them, doth not only accommodate it self unto those Metals, precious Stones, and those plants; but that it doth likewise secretly intermingle it self even with their very substance; and that in the very first Creation it obtained a Mutual and Sympathetical consent with them, then a Familiarity, and Lastly, soon after a Continuation also with them.

But let it indeed be granted, that the Heavens and the Stars do not only (as *Erastus* will have it in this *Quest. Part 1. Disputat. against Paracelsus, Page 151.*) warm these inferior Bodies, and enlighten them, and that in this manner they do (as a Common and general cause) at all times produce one and the same effect in all things here below: but let it likewise be determined, that there are some certain peculiar Stars that work upon these inferior Bodies by their secrets and occult influences, and that they do peculiarly affect those things with which they have the aforesaid familiarity; and that one Star hath a familiarity with the Adamant, another with the Rose, and a third with some other Plant: But I pray, what maketh all this for the engraving and inscribing of Figures and Characters, seeing that the Stars communicate their virtues unto things here below in a meer Natural way, without any pre-script or Artifice of ours? And wherefore do not the Stars and Constellations infuse those their virtues equally and indifferently into Metals or precious Stones, whilest they are whole and entire, and before they are engraven and inscribed with any Characters, as they do afterwards (if these men speak truth) into those that have such like Characters Carved and Engraven upon them? And certain it is, that *Paony* gathered at such a fit season of the year, as also other Plants, and all things else whatsoever that are made use of instead of Natural Amulets, do put forth their virtues; (and so likewise the Loadstone draweth the Iron, and is moved unto the Pole) without any kinde of Figure, or Character engraven thereon. And hereupon *Galen* rightly determineth, that the Jasper stone hath the very same virtues, whether the sign of the Scorpion be carved upon it, yea or no.

And *Henricus Cornelius Agrippa* seemeth to differ but very little from this opinion, who in his 1. *B. of occult Philosoph.* and 33. *Chap.* thus writeth touching the thing in Controversie: *All the Stars (saith he) have their own proper*

*Natures, Proprieties, and Conditions; the Signs and Characters whereof they do by their Raies and Beams produce likewise even in these inferior Bodies, to wit, in the Elements, in precious Stones, in Plants, in Animals, and their Members. Whereupon it is, that every thing whatsoever from its Harmonical disposition, and from its own Star irradiating and Darting its Beams upon it, obtaineth some special Sign and Character imprinted upon it; that is significative of that Star or Harmony; and containing some special virtue in it self, differing from others, either in general, or in special, or in the number of the matter pre-existent. Every thing therefore hath its own Character imprinted upon it (for the working of some peculiar effect by its own Star, and especially by that which above all other things hath the sovereign power and predominance over it: and these Characters contain within themselves, and so also they likewise retain these proper Natures of their own Stars, as also their virtues and Roots, and they produce the like operations with them on other things upon which they are reflected: and they also draw forth and help forward the influences of their own Stars (whether Planets, or even fixed Stars also, and Celestial signs, and Images) to wit, as often as they are wrought and fashioned in a due and fit manner, in their own due and proper time, and with due and fitting Solemnities. And there he also delineateth very strange and admirable letters and Characters, proper and peculiar unto each of the Planets. And therefore if any one desire and seek after the virtues of any Star, the thing that is subject unto that Star is to be engraven upon somewhat that he wears about him. As for instance, if any one desire to have the virtue and influence of the Sun, let him then take Gold and engrave upon it the Character of that Planet, at that very time when the virtues of the said Planet are most strong and vigorous. But these are all meerly grounded upon a false supposition; where-as they take that for granted which indeed was never yet by us, neither will it ever be granted unto them. For first of all, *Agrippa* and others do attribute unto these Seals many such like virtues (as we may see frequently in divers places of their Descriptions) which in very truth cannot be the Natural virtues of any Star. And *Paracelsus* (in the fourth *B. of his Archidox. Magic.*) teacheth us how we may make a Bodkin, and paint and inscribe upon it certain Characters; and then he affirmeth that if any one shal with Chalk make a circle against a wall, and in the very Centre thereof fix the sayd Bodkin, all the flies neer that place will come and sit upon the sayd Circle, and there remain until such time*



time as the Bodkin shall be again pulled out of the Wall. But let *Apella* the Jew believe this; for indeed I shal not.

And yet notwithstanding there are at this day those that do not only believe this, but endeavour likewise by their publique writings to perswade others hereunto; and these conceive that this virtue is by those Characters derived from the Constellations. But let them shew us what Star it is that hath this commanding power over these Flies. *Beelzebub* is indeed called the god of Flies. And without all doubt these poor Flies are more likely to obey his Commands then the Stars. There is Another who tells us how we may make a Seal with the Figure of old Father *Saturn* digging up the Earth with a Spade (which, say they, ought to represent unto us the Planet *Saturn*;) and this Seal if any one shall carry about him in his left Boor, (and why not, I pray, as well in his right Boor, or on his Arm?) he writeth that it will then so preserve a man, that he shall suffer no hurt at all from his Horle; and moreover that it will speed and hasten the hard labor in Child-bearing Women.

And moreover how and from whence will they be able to prove that those strange and uncouth Characters (that are to be seen in *Corn*, *Agrippa*, *Paracelsus*, and others) are the Characters of certain Stars? And not Characters only, but even other Figures also. They paint *Saturn* in the likeness of an old man, with a Pruning Hook, Sythe, Spade, or Plow-share. They paint or Picture *Jupiter* like a King with a Scepter in his Hand. Now what agreement is there between these Figures and those Planets which they Represent? And what, I pray, may the Reason be, that the Planets communicate their virtues and influences unto Metals, only if they be engraven and inscribed with these Figures, and not with others? And who was the first that taught us, that this Star taketh a delight in this kind of Character, and that Star in another kind of Character different from the former? And the Reason is the same for al other Figures; touching all which they ought to prove unto us, that these are the Figures of certain Stars. And moreover, besides these Characters, what mean they by so many Words, which they not only pronounce in the framing and fashioning of these Seals, but they are likewise engraven and imprinted upon these Seals; as we may see in *Paracelsus* his *B. Archidox. Magic.* and in the Seals of *Arnold de villa Nova*.

But others there are that endeavour to free themselves, and clear the controversie, by saying, that individuals when they begin to

be under some determinate Constellation, they then receive a certain admirable faculty (of operating, or of suffering) over and beside that they have in special, or from the species. But let this be granted; yet notwithstanding it cannot be said, that the precious stone, or Metal, do then begin to have their being when they have these Characters engraven upon them; for they were, and had their being before; and indeed their substance was likewise individual; and according also to their own opinion, the Astral Spirit & virtue insinuateth it self into that substance wherewith it hath a Sympathy. For there is, to wit, between natural substances themselves a certain occult and secret familiarity and Sympathy; but yet no such thing between Natural Substances and Artificial Figures.

But others are of this opinion, that the Figure is not indeed the principle of operation, but yet notwithstanding that it conduceth very much unto the said operation. For the conception of a deformed Figure in the minde of Man or Woman, we see what sadness it produceth unto them; and on the contrary what Joy and cheerfulness the conception of a fair and delightful Figure and representation causeth in their Minds and Countenances. And by the Instruments of Artificers, according to the variety of the Figures, so are the operations various; some of them by the Saw, and some others of them by the Hatchet or Axe.

But neither is there any thing of weight or moment in this that they alleadg. For I demand, what Beauty or Deformity there is in these Images and Characters? And whereas fair things delight the minde while they are seen and lookt upon; how (I pray) can these things delight the mind of a Man when they are carried and worn about him covered and seldom look'd upon? And what do those various Names, (and indeed oftentimes such as are altogether unknown to us) confer and add unto the fair and pleasant conception before mentioned? And as for the Instruments of Artificers, the Figure indeed maketh much unto the operations which are by a local motion; but nothing at all unto those operations that are wrought by alterations: for in these the Figure doth nothing at all, neither can it: and precious Stones if they have any natural virtues at al in them, they put forth these their virtues under any Figure whatsoever it be. And *Galen* writeth as touching the *Jasper* stone, in the place above alleadged, that he himself had found by experience, that the virtue thereof was stil one and the same, with, or without the Figure of the Celestial Dragon, or the sign *Scorpio*.

Neither

Neither yet are there any other that hitherto have been able to bring any the least shew of probability for the virtues of these Characters and Seals. And how indeed could they possibly render any Reasons, and give us the causes of such their absurd Tenets; whenas they write, that these Seals do not only expel and drive away Diseases; but that some of them will likewise make a Man gracious unto all Men whatsoever; and that others of them will procure for a man knowledge, Wit, and Memory; others the favour of Princes; others victory in War, and Civil Causes; others good fortune (as they call it) in Hawking, Hunting, Fishing, and Merchandising; and that others will make friends to stand faithful unto them; others advance a Man unto the highest Honors and preferments; and that there are some of these Seals that will make a Man Master of his with whatsoever it be; and I know not what other things that these Seals are able to accomplish for him that weareth them? *Rodolphus Goclenius* (the younger) taketh here a great deal of pains, and troubleth himself exceedingly (in his *Magnetick Syntarbroßer*) and at length he distinguisheth between these Seals; and those whose Authors are said to be *Ragael*, *Chael*, *Terel*, *Hermes*, *Salomon*, these he rejecteth: but there are others of them that he commendeth, to wit, those Seals that are framed and fashioned under some certain position and concurrence of the Stars, and receive naturally all their virtues from the influence of these Stars, and from the Connexion and Continuation of the Natural Causes; without any impiety, or Superstition at all. But now what this Connexion of the Natural Causes is, and in what manner these Seals and Images receive their virtues from Heaven; these things he no where telleth us; neither doth he sufficiently explain himself; only he saith indeed that these things are very clear, and sufficiently manifested by Experiments. But the very same may be said by *Chael*, *Ragael*, and the rest of the Magicians, in the behalf and for the Justifying of their Seals also. And who is there that now daies knoweth not, that even by such like Seals very many have been made inviolable, and not to be hurt by any Weapons? And therefore the Question is not here, what may be done; but the Question is only from what agent these things are performed; and whether by a Natural Cause, or by the assistance of the Evil Spirit.

But now unto any one that shall accurately and exactly and without any prejudice weigh and consider the whole business, it will very easily appear, that these virtues and

effects cannot proceed from any Natural Cause. For two things there are in those Seals, the matter it self, and the Characters engraven upon it; unto neither of which this virtue can be ascribed: for the matter is from Nature, and hath in it no such virtues; and this they themselves see a necessity of confessing.

And here therefore for the proving of the efficacy of these Seals, they betake themselves to Amulets, and pretend the virtue of them. But be it so indeed, that all things whatsoever are written touching these Amulets are true, (as most certain it is: that very many of them are;) yet what is all this unto those Seals; in which if we consider the Metals, Characters, and the like, it is without all doubt, that those things have in them no such virtues. And *Paony*, the Hoof of the Beast *Alx*, and the like, do shew and put forth those virtues that they have, albeit there be no Characters at all engraven upon them: and the like also *Galen* (in the place before alleadged) tells us that he himself had by experience found to be true of the Jasper-stone.

And then as these Seals have not their virtue from the matter; so neither from the Characters, that are from the Artificer; and cannot have any such virtues, either from the Artificer, or from themselves. For why, these Characters are from an Idea in the minde of the Artificer, which doth not work any effect upon things external. And of themselves they are nothing else but Figures. But now there is no power nor efficacy at all in Figures for the working any effect, in regard that they are nothing else but only qualities of a quantity. For all virtue and power of acting is principally from substance; which by its qualities is efficacious and operative. Action is between Contraries of the same kinde, and such are not Natural and Artificial; among which are these Characters. Neither do things Artificial work upon things Natural, nor alter or affect them as they are such: but they Act and work upon them as they have a Natural matter. And so on the contrary, things Natural do not Act upon Artificial things (by altering or affecting them) as such, but as they consist of a Natural matter. And therefore Images or Names engraven upon matter can of themselves perform nothing; and the matter it is be at all affected by the Heavens, is equally and as much affected if it hath not any Image or Figure at all engraven upon it; and as for Characters, Figures, and Words, engraven upon the matter, they have in them no peculiar virtue of receiving the Influences of the Caelestial Bodies; neither can they

they give any such virtue unto the Matter.

The truth is that *Rodolphus Goclenius* the younger doth indeed endeavour to give an Answer unto this objection; whilst (in his *Magnetick Synarthrosis*, page 101.) he thus writeth: *It is not the Statue (saith he) as a Statue, neither yet the Seal, nor the Image and figure, as such, that can affect any other Statue or quality. For the very truth is, that these Artificial Seals do acquire no virtue at all from Art; but the virtue is instilled and infused into them from Heaven, and the Stars. I say again that this same Celestial Ray, and Astral spirit that is sent down thither, and here bath its influence, (in this sublunary world) doth not only Accomodate it self unto the Metalls, Stones, and those plants aforesaid; but doth likewise secretly and imperceptibly insinuate it self into their very substance; with the which (even from the very first Creation) it hath obtained a Mutual and sympathetick familiarity, connexion, and continuation. But now this spirit bath its influence without any adjuration, Consecration, and invocation of Devils; but altogether in a Natural way. But all that he answereth is nothing worth. For this is that very thing (according as it is in the Question) which he ought to prove, to wit, that upon Metals, and papers, ignorantly engraven and Lettered, there can any such like virtue (as is attributed unto these Seals) be derived from heaven, and the Stars. For although we do not deny, that the Stars have their secret influences upon these inferior bodies (and therefore he hath taken much pains to very little purpose in proving of it,) to wit, that the Stars do act upon these inferior bodies not only by their motion and light, but also by their occult influence: yet nevertheless, two things there are especially of which there is great question to be made. The first is this, whether the Stars have in them any such virtue of producing fortuitous Events, and meer casualties, and such effects as are not Natural but wholly depend upon the will and good pleasure of Men. And the other is this, to wit, why they do not communicate those their influential virtues unto Metalls as they are of themselves, but only unto such of them as are engraven with Characters. For what have those Characters to do with the Stars? And what hath Mars in the Heavens to do with the image of an Armed man? Or what hath Saturn to do with an old man holding the plough? And so of all other the Planets.*

And the very same is likewise to be sayd (the case standing al one) touching the signs of the Zodiac, and the rest of the Asterisms unto which Names have been given by Men according to their wills and pleasure; (for

the teaching and instructing of others in the grounds of Astronomy) who could (if they had so pleased) have given some other names unto those Asterisms, which we now from them call, *Pisces*, or *Sagittarius*. Like as the Hollanders, even in our Age, have most freely (and according as they thought good) imposed names upon all those Meridional signs that they observed in their Navigations to the Southerly parts. And so the signs and figures likewise (denoting those Asterisms,) have been imposed according to the wills and fancies of Men: and therefore we conclude, that there is no Necessity at all why the virtue of any Star should insinuate it self into any such Character as is imposed meerly by the wil and fancie of Men, although it be engraven and inscribed at such a certain time, the Star being then in such or such a position.

And therefore the whole controversy at length returns to this, that from a Naturall Cause there can no such virtue be ascribed unto Seals and such like Characters: and if there be any, (for of this very thing there is great doubt to be made; and many things without question are much talked of and boasted, which indeed were never yet experimentally found to be true) as *Paracelsus*, *Arnoldus de villa Nova*, *Thurneiserus*, (and other of our more Modern Authors) produce many things to this purpose; I say if any such efficacy be found in them, it is to be ascribed either to the imagination, (for there is none that knoweth not, that the power and strength of the Imagination is very great and almost incredible) or else if it be not so; then of necessity it must depend upon some supernatural cause; that is to say indeed upon wicked spirits, who by such like Characters, as by certain signs, are tacitly invired and called unto, by virtue of a former Compact they had long before entered into with his Servants that engaged themselves in a League with him. For these things have their original from the Gentiles that were extremely addicted to superstition and Idolatry: and those wicked spirits made and framed unto themselves such like Seals, and Characters, to serve instead of Military pawns and pledges. And therefore they avayl from that Compact (whether explicate or implicate) to wit, that which the Devil entered into with that person who first received and suckt in this Discipline from him. Now the Devil doth this, to confirm and establish the compact, and the superstitions constituted by himself; and that he may ingraft them into the minds of Men; or else being ingrafted that he might confirm and propagate the same; and so by this, as by all other means, with-  
draw



draw man and hurry him away ( unto himself ) from God his creatour, and from those Means by him created, and ordayned for the safety and welfare of Mankind. And therefore these things ( and al other of this nature ) are nothing else but certain owls or the Devils Night-birds, with which he useth to hawk for the souls of Mankind. And therefore it is by no means to be endured, what *Pbedro* writeth ( in his *Chirurgia minore* ) that in such Characteristick Cures there lie concealed greater and more miraculous Secrets of the First Fathers and the Ancient Prophets, then is fit for us to expresse and discover unto others. The rash bold Man ought first of all to have demonstrated that this so great a virtue is either by God and Nature, or else by Art, put upon these Characters and constellated words ( as he calls them ; ) then so to have raged and railed against other Physicians, terming them ( as he doth ) blasphemous, and men of an ill conscience, so to detract the honour from God in these his highest and miraculous operations of the Characteristick Cure. He honoreth God who contemplateth, admirereth, and Celebrateth the works of God, such as are by him created, and as they come forth of his hands. And he may truly be sayd to be injurious against God, and impious, who attributeth unto any of his Creatures those virtues which they have neither received from God, nor yet from Art.

And as for those first Fathers, and the Ancient Prophets he speaks of, who ( as he writeth ) used this Characteristick Cure, they are not those of whom we find mention made in holy writ ; for it cannot be proved by any Argument that these ever admitted of any such superstitious practises : but they are those that we find mention made of in *Asclepius Hermer Tresmegistus*, in these words *Because* ( saith he ) *that our Fore-fathers erred much against, and walked contrary unto the command of the Gods, ( incredulous as they were ) and not beeding Divine worship, but sleighting true Piety and Religion, they invented an Art by which they might have Gods unto themselves ; unto which when they had invented it they adjoynd that fit and convenient virtue that procedeth from the very soul of the World, and this they mingled with the said Art. And because they were not able to make Souls, calling forth the Souls of Devils, or Angels, they conferred these upon their Images, and their Divine Mysteries ; by which these their Idols alone might have power and might of doing good or doing Evil unto others, as they thought good. And al others who have approved of those Characters, & defended them have been very much addicted unto the damnable art Magick,*

and unto all kind of superstitious practises ; to wit, the *Platonists*, ( the most Stupidious & devout Worshippers of Devils ) *Cornelius Agrippa*, *Paracelsus*, and others the like, very much suspected as touching this infamous Magick. Neither doth this any thing avail them, to say, that such things as these may be done, without any invocation upon the Devil, and adjuration of the Wicked spirits, and by other unlawful Means ; and that they may be wrought by a Natural power. For first of all they were to prove that these have within them those peculiar virtues that Metalls and precious stones of themselves have not ; which, unless they can prove we may truly conclude that they make use of unlawful means, and such as were never ordayned by God, nor propounded by Nature for our practise. And moreover, though there appear no immediate compact with the Devil, nor any explicite Conjunction, at the present ; yet Nevertheless there may be for all this ( and questionless there is ) an implicite compact with the Devil ; who very well knows and is ready to acknowledg those his pawns and engagements ( as it were ) once given and appointed unto his followers and Worshippers. And who is there of all these who would defend these Seals from the suspicion of all superstition and Idolatry, that can explain unto us what these strange and wonderful Characters ( and as *Apulcius* termeth them ) so lettered that they cannot be understood, and those unknown Words, which appear in the Seals that are propounded by *Paracelsus*, ( in his *Archidox. Magic.* & elsewhere ) signify ; or that dares pais his word, and engage his faith upon it, that these figures and unknown words are not the Devils pawns and assurances by which he obligeth unto himself his worshippers and votaries ? A German understandeth not what is written in the Turkish Language, but a Turk doth ; as likewise neither doth a Turk understand that which is written in the German tongue, which yet a German doth. And so although it be not every man that understandeth these strange uncouth Characters, or knoweth what to make of those never heard of words ( not so be understood ) yet notwithstanding, the Devil ( as the Author of that Alphabet and writing, ) understands them very well ; and accordingly being by these invoked, and called upon for his assistance, he readily affordeth the same unto the utmost of his power. And therefore, let any who so pleaseth esteem of these waies & practises, & account of them as highly as he listeth ; but as for my own part, I shall endeavour to keep in mind that first and Chief command of God ; to wit, *Thou shalt have no other Gods.*

And

And therefore seeing that from what hath been said is clearly appeareth that there are no Natural virtues in these Seals and *Periapta*; it is even from hence manifest, that these things cannot possibly render a man inviolable, and so as not to be hurt by any Weapons of War: and for this cause we have been the more large in the handling of this Controversie; and at length conclude with this, that whatsoever is attributed unto them they have it not either from Heaven, or from any other Natural Cause, but that all this is nothing else but the meer invention of the Devil; and that therefore it cannot be made use of without Idolatry. For God so formed and fram'd the Body of Man, that it should be soft, and sensible of pain, and the solution of Unity; and therefore whosoever he be that would dispose and make it otherwise, he opposeth himself unto Gods order and intention, and useth the Devils help and assistance therein. For the Cause of this effect is altogether to be referred, either unto Nature, or unto God, or unto Men, or unto those means that are administered; or else lastly, it is to be ascribed unto the Devil. Unto Nature it cannot be referred; for she hath formed unto Man such a Body, that it may be violated by any kind of Weapons. Neither can this effect be attributed unto God, who without a Miracle doth not change the order and course of Nature. Neither doth it appear from Scripture, or any sacred History, that ever any such thing was done by God: although that (by his own command) his people have oftentimes waged most dangerous and difficult Wars against divers of their and his enemies. Neither can any such effect proceed from Men, who (as it is very well known) have no power as of themselves to perform any such thing. Neither likewise, if we consider those means, have they any power in them any way whatsoever to produce such an effect, and to invert the order of Nature. For they are either Characters, or words, or some such like thing, unto which no such virtues were every yet given and granted either by God, or else by Nature. And therefore it cometh al (at length) to this, that such things as these are performed by the help and assistance of the Devil. For albeit there are many who think that there passeth no commerce at all betwixt them and the Devil, although they shall make use of such means: yet notwithstanding these ought to know, that such means as they (first of all) have no warrant from God, so neither were they invented by Men, but suggested unto those persons (even by the Devil himself) who at first entered into a league and Covenant with

him; and therefore they are to know, that all those that make use of them do make themselves partakers of this compact, as we have often said before.

And that the evil and wicked Spirit doth meerly Cheat and delude men by these *Periapta* appeareth even by this, that when men have thought themselves by this means, and in this manner, sufficiently fenced and guarded against the violence of all kind of Weapons; there were others found that were able to Nul, Dissolve, and quite take away that inviolability, as they term it, and proof against the force of Weapons; and so when they least of all look for or suspect any such thing, they perish in this their superstition.

And the truth is, the waies they have to uncharm the Body, and to render it penetrable by Weapons, or Gun-shot, are for the most part (as they say) of very little weight or moment; but they are (I confess) unto me altogether unknown: and yet notwithstanding from the Relation of others (of the vulgar people) it plainly appeareth that those *Periapta* have no power of fencing and preserving the Body against bullets of Silver; as also that a mans Body cannot be made inviolable, if the Leaden bullet be but never so little chawed in the mouth; if the Swords point be heated in the Fire, and then anoynted with Sewer; if the Sword be run into the ground, or thrust into broad; and if many other such like things be done; in which to be curious is neither my business, nor intention. But this will most certainly from hence appear, that the Devil is a Liar, and that he keepeth not the Covenant and Compact he entereth into with his Servants; but that he oftentimes Cheateth and Deceiveth them; and that when he communicateth that Art unto Men, he doth not this that he may benefit them; but only layeth Snares for their Souls, whilst he most of all pretendeth and promiseth the making of their Bodies safe from all manner of injuries. Of which there are extant many instances and examples; and among the rest, remarkable is that example which happened at *Misnia* in the Moneth of February, this very year 1634. For there (at *Misnia*) when as a certain Souldier (in his Cups) was boasting and making his brags (with that solemn, but yet now adaies too common an adjuration among the Souldiers, *Let the Devil fetch me, or, the Devil take me*) that he was inviolable, and impenetrable by any Weapons whatsoever; and that he might give them an experiment to confirm the truth of what he had said drew forth a short Sword, and therewith he violently smote twice upon his naked Breast,

Breast, (inasmuch that the Sword was even bowed and made crooked thereby) and yet had no hurt at all by thus doing; but when he attempted to do the same the third time, then the Sword suddenly penetrated into his Breast, and pierced even unto his very heart; and so this miserable wretch perished in this miserable manner.

And therefore let every Christian and pious Souldier be hereof warned that he make not use of any such wicked and unlawful means (as being and proceeding meely from the Devil) but that he content himself in the safe guarding of his Body by lawful Arts and waies; and as for all other things, let him commit them unto almighty God, who hath our lives in his Hands; and without whose will there is not one hair can fall from our Heads.



## THE FIFTH BOOK,

### THE FIFTH PART.

#### *Of Fractures.*

#### Chap. 1. Of Fractures, and the Cure of them in General.

THAT which in a soft part is called a Wound, the same is in a hard part, and bone, called a *Fracture*, (by the Greeks properly termed *Agma*, and *Catagma*) which is a division or rupture of the bone, from some external Cause violently rushing and breaking in upon it. Now as for those that have written at large and very accurately touching Fractures, they are (in this first place, and especially) Hippocrates in his *Book of Fractures*; and Galen in his *Comment upon the said Book*; and in his *sixth Book of the Meth. of Curing*, Chap. 5. and 6. And among the more modern Authors, and those of our own time, Hieronymus Fabricius ab Aquapendente, in his *B. of Chirurgery*, Tit. of the *Fractures of the Bones*; and these Authors you may have recourse unto, for your more full satisfaction in so weighty a point; in the mean time I shal endeavour briefly and

plainly to Contract the whole substance of the subject in Hand, and so to set it before you.

#### *The Differences.*

Galen (in his *sixth B. of the Meth. of Curing*, and 5. Chap.) telleth us what these Differences are. For sometimes (saith he) the bones are broken transversely; and then it is chiefly and properly to be termed a *Fracture*; but then indeed if the bones be so broken, that by no Art or means that can be used the ends and extreme parts of them may be brought and made to stick fast together as before, and that they lie not directly one against the other, this kind of *Fracture* is (in special) called *Caulodon* from the resemblance and likeness that it hath with a broken stalk. And Paulus Aegineta writeth that this *Caulodon Catagma* is likewise called *Raphanodon*, and *Sicnodon*, from the similitude of a broken Raddish and Cucumber, But if the bone be not only broken into two parts, but that it be likewise shivered into many, that *Fracture* is termed *Sutrimma*, or *Comminution*; and by Galen it is also called *Caruedon*, because that it is made after the manner of broken Nut-shells. But if the bones be cleft according to their length like as Wood is cleft, it is then called *Parameces*, that is to say, (properly) a right or straight *Fissure* or *Cleft*; and by Galen it is termed *Schidacodon*. In the Head, this species of the solution of Unity hath names peculiar and proper unto it; touching which see Hippocrates, in his *B. of the Wounds of the Head*, and in his *first B. of Practise*, Part 1. Chap. 23.

And of these Fractures there are likewise several other differences; for some of them are great, and some again but smal Fractures; some of them simple or single Fractures, and all but one alone; but then another Fracture there is that is manifold; as consisting of many; some equal, others unequal; and the bones are also broken sometimes in one manner, and sometimes in another manner, and that very different. And the truth is, the Ancients gave them their names from the Figure and the likeness of other parts; and (as we told you before) they called them *Caulodon*, *Raphanodon*, *Sicnodon*, *Catagma*; and sometimes likewise *Alphredon*, when the bone is broken and shattered into many smal and thin parts, not unlike unto Meal; they call another sort of Fracture also *Calamedon*, that is to say, the breaking of a Reed, *eis Onucha*, after the form of a Nail. All which Appellations notwithstanding are for the most part sleighted and neglected by Hippocrates, who instead of them hath made use of Names



Names more ordinary and usual, as one rather desirous to interpret, and choosing rather by speaking of them in more words, so to describe them. And sometimes all the parts of the broken bone do again joyn and grow together; but sometimes some one or other parts of the broken bone inpossumateth and droppeth out.

There are likewise divers other differences; that are taken from the part affected. For one is said to be a Fracture of the Shoulder; another of the Arm, another of the Thigh; and so of the other parts. And then indeed in the Arm, either but one of the two bones, or else both of them (to wit, the *Ulna*, and the *Radius*, bones) are broken. And in like manner it is also in the Thigh, the case being one and the same. The bones of the Nose are likewise broken; and so are also the Channel bones, the Ribbs, and the whirl-bone.

And there are moreover (besides these) other differences that are meerly accidental; when as a bone broken either abideth still in its own place, or else is carried forth thereof, and lifted above some other bone; and that sometimes the Fracture is but newly made, and sometimes it is old, and of a long continuance. And there are also other differences, that are improperly so called; as that a Fracture is conjoynd sometimes with a Wound, sometimes with a Luxation or disjoyning, and sometimes with other affects. For sometimes there is a Fracture made, the Skin and Flesh lying above it still remaining sound and whole; and sometimes these happen likewise to be hurt and wounded. And sometimes also together with the Fracture there happeneth a loosening of the Joynt neer unto it. And sometimes unto a Fracture there happeneth an extraordinary pain, a swelling, and an Inflammation: but sometimes again, there are none of all these joyned with, or following upon the Fracture.

### The Causes.

Now all things may be said to break the bones, that so endeavour to bow and bend them, that they (being not flexible) must necessarily be broken. *Galen* (in his second B. of Fractures, and Text 9.) reduceth them all unto four Causes, whilst he writeth after this manner: It is either something (saith he) that can bruise and batter, if it be laid on with great force and violence (and this without doubt ought to be some Body that is hard of substance, and heavy in its weight); or else it is something that doth not only divide the Skin, or that divideth likewise something that lieth under the Skin, even unto the very bones, but which divideth also the very bones themselves: which Malady Hip-

pocrates himself indeed calleth *Edra*, (that is to say, a Decession) in his B. of the Wounds of the Head. And moreover also some by leaping from an high place have broken either the Ankle or the Thigh bone; which in these persons were drier, and not so thick perhaps as in others. For I myself also have seen in the common wrestling, when in the turning of a man round a Fracture hath happened unto him, who having hereby had his Ankle together with the Calf of his Leg broken by the greatness of the Wound the bones have been made naked and bare. For this Fracture happened upon his Ankle being gotten under the Leg of his Adversary that wrestled with him, in a transverse or overthwart manner; so that both the Heads thereof, as well that toward the Foot, as that above toward the Knee, were pressed downward with great violence: like as we also see it in Wood, which we our selves endeavour by bowing and bending it round to break. For if a piece of Wood be put upon ones Thigh, and then from both ends or Heads pressed down vehemently with the Hands, we shall then soon perceive it to be broken in the middle part.

But yet notwithstanding even the very Constitution of the bones doth sometimes cause the Fracture of the bones; the Constitution of them being sometimes too brittle, that it cannot brook the least violence; and sometimes again more hard; so that it cannot be broken but with a far greater violence and force. And rottenness likewise rendereth the bones very frail and weak, and especially that which followeth the French Pox, and in those that often make use of Mercurial Inunctions. Of this strange and wonderful frailty and weakness in the bones there is extant a Memorable History in *Marcellus Donatus*, in his Hist. Medic. Mirabil. B. 4: Chap. 5. And the story is briefly this: Vincentius Morellus, Coach-man unto that Famous Poet, and Noble Patriarch, D. Dionysius de Pietis, sporting, and playing the wag with others of his fellow Servants, snatcht up half an Orange from off the Table, and threw it as hard as he could at the Head of his fellow Servant running before him; but as it fell out, he did himself more mischief then the other. For in that Arm whereunto he threw (by reason of the strong and forcible motion) the bone of the right Shoulder was so broken, that the Heads of the broken bone being disjoynd one from the other, were easily and manifestly found to be so even by the touch. But strange it is to hear what followed. This bone was no sooner splinted and bolstered up with Iron plates (in regard that he could not now do his business as formerly) but at midnight lying in his bed, and awaking, he put down the other Arm to reach himself the Chamber pot: in which Motion

tion the bone of the left Arm was broken about the middle of it; and this was likewise set and bound up by the help of the Physician. This Man for many years before had been sore troubled with the French Pox in a most grievous manner; in so much that his Head, Legs, and Arms were full of hard knotty swellings, which at length by his often anoynting them with Unguents of Hydrarge, seemed to sink down and disappear. Wherefore we can think no other, but that the rottenness eating through the bones of the Arm, and thereby vitiating and corrupting them, made way and gave occasion for this so easie and much to be admired Fracture. Two Histories Paralel to this we meet with in Schenckius (in his 5. B. and 8. Observat.) from the observation of D. Camerarius. For Capivaccius had sometime related unto him, that a certain person in throwing an Almond shell against the pavement, instead of breaking that, brake his Arm. As likewise he related of another, that but knocking something with a Mallet, (and that not very hard neither) brake his Arm likewise. Two other such Histories we meet with in Guilhelm. Fabricius, in the 2<sup>d</sup> Century of his Observations. The first is of Philibert Sarrazenus (a Physician of Leyden) who writeth unto Fabricius (Observat. 66.) in this manner: A certain man (saith he) a Citizen of Leyden (threescore years of Age) was tortured with an obtuse and dull pain (for the space of almost two moneths) proceeding from a Plegmatick Gout in the Joynts of his Shoulder and right Arm. Remedies he used none all this while: only he procured what rest he could for that part, by having the Arm affected wrapt up in a Swathe, and continually resting upon his Breast. He being otherwise very sound and healthy, about eight of the Clock in the morning goeth forth abroad unto the shop; and while he was sitting on a Glove upon the hand of the right Arm, (and that as gently as he could) he brake the bone of his Arm (transversely or overthwart) four or five Fingers below the Shoulder. I being sent for went immediately unto him, and there I beheld the whole business as it was, not without very great admiration; I searched the Arm and Shoulder, and by a Chirurgeon I restored the bone unto his former place, and commanded that convenient Remedies should be administered, and applied unto the part affected. After three daies I went again to visit this Patient, that I might search and find whether or no all things had been rightly ordered and applied. And having removed the Swath-bands and the Splinters, we saw that the bone was returned unto its Natural Situation; and we soon perceived it to be so by pressing down our Fingers upon the place. But Lo, a little below this, about the Joynt of the Elbow, a new Fracture of the same bone

(which as yet we had not seen) offered it self unto our view; very sad and grievous pains excruciate the Patient; and therefore we again betake our selves with all diligence unto our work, and endeavour again the restoring of the broken bone unto its proper place. Upon which all things succeeded well, and the pains were all calmd, insomuch that now he taketh very comfortable rest: but yet nevertheless, from that time forward the Swaths were never unfolded; neither was he ever seen (hitherto) to make any use of that part. And that which made me so much to admire the strange and wonderful unwonted frailty and brittleness of the bones in this Person, was this, that he altogether denied that he had been at any time troubled with any affects of the bones, contracted either from the joint Disease, or from any other cause.

The other History we find in the sixty eighth of his Observations, in these very words: Philibert Brachlea (of Sequinum) being now in the fifty ninth year of her Age, of her own accord and without any manner of violence externally offered unto her by any whomsoever had her bones broken, so that she died thereof, in the year 1606. This Woman while on the Lords day (which it seems according to the Rite and Custon of the Country was held more sacred then ordinary) she was in the morning putting on a new Smock petticoat, lifting up her Body as she lay in her bed, and her Hands stretched forth above her Head; she perceived (by the great pain she felt on the sudden) that she had not only dislocated, but broken the bone of one of her Arms; so that there was need of the Chirurgeons help: who when he had fitly put together the extreme parts and ends of the broken bones, and bound them up with Swaths, he moreover outwardly administered fit and proper Remedies, and so at length had the happiness to Cure that affect. But this miserable and unfortunate Woman was no sooner freed from these streights, but she must yet again fall into a worse mischance, and undergo the violence and grief of a greater Malady. For when as at last (after that she had now a long time kept her bed) she desired to be raised up out of it by the help of her house-hold Servants; before she went to the Fire side, her Maid that then waited upon her in putting on her Stockings, (so soon as ever she had but endeavoured it) only laying on her Hands to help her Mistress, brake the bone of her right Leg in a transverse overthwart manner; which the Chirurgeon again repaired. In these troubles and griefs the poor miserable Woman lived for the space of two years; and having at this two years time been troubled with divers Fractures, and innumerable pains from day to day) she had at length her life shortened and taken away by them. And the Author of this Observation writeth, that the strange



and much to be admired fractures in this woman were not caused either by the French Pox, or from any other Diseases, she having not been at any time affected with the one or the other; nor ever in all her life troubled with any such sickness. But his conjecture is, that the true cause hereof was some occult and secret poyson, proceeding from some extraordinary and notable corrupting of the humors; which up and down, on all sides passing throw the whole substance of the bones corrupted it in this strange and unexpressible manner.

### Signs Diagnostick:

A Transverse fracture, or that which is made in an oblique manner may easily be known, because that by the very touch the extremities of the broken bone (being now separated) are soon discovered; and likewise in the place of the fracture there is found a Cavity, or hollowness that is not Natural. And moreover the body, and especially the broken Member cannot be moved after the due and wonted manner. And there ariseth likewise, before the bones be set and brought together again into their places, an extreme and most intollerable pain, whiles that the extremities of the broken bone prick and grate upon the parts nigh unto them, being very quick of sense and feeling. Which that it may be the more rightly known, the member that is sound is to be compared (as Arm with Arm, Leg with Leg) with that that is broken. And very often also it so falls out that by reason of a broken bone the Member is made shorter then it should be, whilest the Muscles draw up the inferior part of the bone. And for the most part likewise fractures are generally and commonly well known; some violent causes (having power enough to break the bones) usually preceding. But then those fractures that are made longways in the bone, are not to be known but with more difficulty: and yet notwithstanding they may be discovered from the preternatural thickness of the Member, as also from the inequality, and pain thereof.

The bones oftentimes likewise impostumate and drop forth, to wit, when all their small parts and little pieces could not be brought back and set in their proper places, and thereupon are left destitute and naked of flesh: and this is known by the blackness of the bone, (if at least it lie open unto the view) or else by the stirring and moving up and down of the bone, if it be found not to adhere and stick close unto the other bones.

### Prognosticks.

1. The fracture of the bones made according to the length of them is more easily cured then that fracture that is made either in an oblique, or in a transverse manner. For there is no such need of any laborious replacing of the bones; but it is sufficient, if the bones (gaping as it were) be again Joyned close together.

2. Among the Transverse and oblique fractures, that is most easily Cured (and hath least of danger in it) that is single or simple, and equal; and in which the broken bones are not at all moved out of their places.

3. Those fractures in which the heads of the broken bones are refuse and blunt have but little of danger in them: but when they are sharp-pointed, those fractures are the worst and most dangerous of any; in regard that they are not easily to be set close together (as having nothing of any blunt bone to rest upon) and because they also hurt and wound the flesh, and sometimes likewise a Nerve or Muscle, as *Celsus* tells us in his fifth Book, and Chap. 7.

4. The fracture is then very difficult to be cured, when the bone is divided into many fragments; and the more the small pieces are, still the more difficult is the Cure like to prove: and so also when there are sharp pointed stickings out, which prick and wound the parts that lye neer unto them.

5. By how much the greater the fracture is, and by how much the greater also the broken bones are, with so much the more difficulty and slowness is the fracture Cured.

6. When two bones Joyned together (as in the Arm, the *Radius*, and the *Ulna*; in the Leg, the Ankle and the *Fibula*) are both of them broken, the Cure will be more difficult then if only one of these be broken. For if one of these bones remain whole and unbroken the Muscles cannot then so easily be contracted, as being kept stretched out by the unbroken bone. And so likewise when the broken bone is set again in its former place, if the other be whole, that serveth instead of a prop unto that which is broken and a greater help and benefit it is unto it, then are either the swathes or the splinters, or both of them together. But on the Contrary, if they be both broken, all things that are performed in the keeping in its place the bone after it is set must be done with far greater Care, curiosity, and pains-taking.

7. The Fracture that is made in the middle of the bone is to be accounted lighter, and less dangerous then that which is nigher unto the head of the bone, whether it be the superior



perior or the inferior head. For whereas nigh unto the lower head there are many Tendons, and neer unto the upper head very many Nerves; the greater are the pains that are excited; and the Cure is rendered so much the more difficult. But if the fracture be nigh unto the Joynt, it is then the most dangerous of any, in regard that there are in that place both Tendons, and Nerves, and Ligaaments; and because that the broken part cannot there be so conveniently bound up; and because also, in this bloodless and cold place the heat is but very weak. And albeit that the fracture may in that place be consolidated; yet nevertheless it leaveth behind it a great impediment in the motion of that Member, by reason of the *Callus* which bindeth (as it were) the Tendons or Muscles.

8. A new fracture is very apt and ready to be consolidated. But if there be any time delayed, the Cure is thereby altogether rendered the more difficult; not only because that upon the happening of the inflammation that extension of the part (which is required) cannot be performed without much danger; but likewise because that the extremities of the bones become hardened, so that they can never after this be brought to Joyn and grow together again; and this more especially happeneth in aged persons. And therefore we must endeavour all we can that as speedily as may be the Extremities of the bones may be fitted and Joyned together the one to the other; for so by this means they will afterward the more easily grow together again: for be it how it will, if so be that pain and an Inflammation happen upon the fracture, they render the Cure the more difficult.

9. If in a fracture of some one of the more eminent bones the fit and Convenient Cure thereof be protracted and put off beyond the seventh day; there will then be danger lest that something of the bones be benumbed & impostumated; as *Galen* tells us, in his third Book of *Fractures Text.* . 37.

10. And so likewise if there be a Contusion of the flesh, and a wound Joyned together with the Fracture, the Fracture is then very dangerous; and so much the more dangerous, by how much the wound is the greater; and especially if any of the greater Muscles (as of the thigh and shoulder) shall be Wounded. For then Inflammations do very easily happen; and at length, the *Gangrene*, and *Sphacelus*. And that likewise which here maketh the Cure to be the more difficult is this, to wit, that the splinters (and the other like things that are necessarily required for the keeping of the bones in

after they are brought back unto their proper places, cannot so conveniently and fitly be administred, in regard that a hole is to be kept open for the better curing of the Wound.

11. If the bones be so broken and shattered that they cannot be reduced unto their former wonted State and place, we cannot then any wayes promise unto the Patient the recovery of his perfect health again: for although the bones may possibly grow together again; yet Nevertheless the Member is by this means made much shorter then before, and so altogether unfit for the discharge of its former offices.

12. The bones when they are so broken that they cannot possibly be restored again, we must then know that it will not be long ere they be impostumated, and fall forth; and so will likewise those that are wholly destitute and bare of flesh: so *Hippocrates* in his third Book of *Fractures Text.* 44. Now the bones impostumate, and drop out, sometimes sooner, and sometimes it is longer ere this be done. Those bones are soonest separated that are soonest withered, and soonest driven forth by the flesh growing underneath them. And therefore the smal bone is soonest impostumated and separated, and that bone likewise that is in some extreme part; and the bone also that is but thin; whereupon it is, that in less then fourteen days such bones as these last spoken of use to be separated. But the greater and more solid bones are longer ere they impostumate and separate; for it is both a longer time ere they are withered, and likewise ere they are driven forth by the flesh that groweth up underneath them: and hence it is, that they are seldom or never impostumated and driven forth before the fourtyeth day at the soonest; but now and then the impostumation and dropping forth of the bone is deferred unto the Sixtyeth day, and oftentimes also for the space of many Months. Yea and sometimes it so happeneth that the small fragments of bones shattered and broken all to pieces have not broken forth untill after many yeers; as we have an instance hereof given us by *Guilhelm. Frabricius*, in his 4. *Century.* and 97. *Observation.* And I my self likewise know a very eminent Commander, a Captain of foot, who at *Norinberg* was with a bullet shot throw the right Arm; by which his shoulder bone was broken; out of which wound even until this very year 1634. there brake forth fragments and smal pieces of Bones.

13. The Age likewise, the temper, and habit of the body, the course and kind of life, the time of the year, the Region, the state of the Heavens, and even all things else

whatsoever that have in them a power of determining the Natural strength ( either by augmenting or diminishing it ) these al may render the Cure more or less difficult. And therefore it is that the Curing of a Fracture is in young persons a matter of no great difficulty ; but in such as are aged and decrepite the cure is much harder, yea and oftentimes altogether impossible.

14. Fractures with an Inflammation and a bruising of the flesh are full of danger ; in regard that those cannot be fully and entirely Cured, until these shall first of all be perfectly healed.

15. Touching the time for the Consolidation of a fracture, there can nothing of a certainty be foretold ; seeing that it differeth, and is very various according to the Age, habit of the body, the time of the year, and other such like Circumstances. For in such as are young, if they be of a good habit and Constitution, and observe a good and orderly Dyet, and live under a temperate Climate ; the bones in these are much the sooner consolidated : but far more slowly in aged people, and such as are more weak and infirm.

16. And lastly, the Fractures of the Nose, of the Jaw-bones, of the Throat, of the Breast, of the Shoulder blades, the Ribbs, the Spina or back bone, the Ankle, heel, Hand, and Sole of the foot, are consolidated betwixt the twentieth and the twenty fourth day ; those of the Leggs and Arms within Thirty five daies, or betwixt the 35. and the fourtyeth day.

### The Cure.

The Simple or Single fracture ( being as it is a species of unity dissolved ) hath even one only common and universal indication, to wit, that what is thus disjoyned must again be united. And although that this uniting be the work of Nature, as in Wounds ; yet nevertheless, that Nature may the better attain unto her scope, and effect her purpose, there are yet many other things necessary. To wit, whereas the broken bones are

what things are necessarily required for the curing of broken bones.

for the most part removed out of their due places ; if this shall so happen, then the broken bones are again to be restored unto their own proper places ; and then in the next place, they are with all exactness and accurateness, to be fitted and joyned together, as before in their Natural state ; and so being in this exact manner conjoyned, they are thus to be kept. Which things when the chyrurgeon hath with all his skill and dexterity accomplished, the

Uniting afterward of the bones, and the generating of the *Callus*, are to be committed unto Nature, as her proper and peculiar work. And yet Nevertheless, the Physitian ought not to be remiss in affording unto Nature the best of his help and furtherance : and this he may do, if he do what he can for the preserving of the Natural temperament of the part ; and take care that the inflammation and all other the Symptoms that usually accompany and attend these fractures, and disturb nature in her work, be prevented and kept off. Or if they shall at all happen, that with what speed he may he remove them.

And therefore, in the first place, ( as *Cornelius Celsus* teacheth us, in his *B. 8. and Chap. 7.* ) we are to be well advised upon mature Consideration, whether the broken bones be fallen out of their places, yea or no ; for it is alwaies so, that when the bones are broken in a transverse or overthwart manner, they fall out of their own natural Seats. Now it is known that the broken bones are not removed out of their proper places, if in the place where the fracture is there be no Cavity or hollowness perceived, neither any sense of pricking ; and that the Member doth not appear shorter then before. And therefore in this kind of fracture there is not any need at all that the member be any whit extended ; or that we trouble our selves in the least with the returning back and fit joyning together of the broken bones. For it may so very easily come to pass ( if this be but attempted by us ) that pains may be excited, & the heads and such parts of the broken bones that stick forth may hereby be crushed and grated one against another, and so broken : but here we are only to endeavor, that the broken bones may be kept in their own Natural Seats, and there again united, as anon we shall further shew you how this is to be done.

But if the broken bones shall be fallen out of their own proper places, so that one shall be carryed forth and cast upon another, then in this case our first and main Care ought to be, that these broken bones may again be restored unto their own places. Now this is to be done ( chiefly and primarily ) by two operations, the former whereof is called *Catathesis* or *Antistasis*, i. e. an *Extension* ; but the other we term *Diorthosis*, i. e. *Conformation* or a putting back again of the bones into their own places. But now, so it is that none can rightly perform these operations, but he that well understandeth the Nature of the bones, and knoweth the differences of fractures. The Nature of the bones is to be known out of *Galen his treatise of the bones*, & the books of other Anatomists ; especially by our own ocular

ocular inspection, and taking a right view of them in our Anatomy Lectures. And for the differences of Fractures, *Galen* (in his sixth B. of the *Meth. of Curing*, and 5. Chapt.) tells us what they are.

And first of all therefore in the restoring and returning back of the broken bones into their places, there is requisite an extension of the part. For when as without the Cutting asunder of any Muscle either the parts of the broken bone are removed out of their proper places, or else that the Joynt is fallen forth of its due place, the Muscle whose beginning is annexed unto that part into which either a part of the broken bone inclineth, or the Joynt falleth forth unto, is wholly drawn back unto its own Head; and so by this means together with it self it carrieth along that part of the Member which is Joynted with it. Wherefore it cannot possibly be that either the broken bone should be rightly conformed, or that the loosened bone should be again restored back unto its own place and seat, before that it be so much drawn back as it was before removed out of its place into this or that part. For otherwise, if (to wit) there be not made a right extension, in Fractures, by attrition the eminencies (or parts sticking forth from the bones) would be broken, by being crushed together one against the other, so that they could not possibly be put back again into their own places and Cavities, but that they must either externally stick at the sides of the bones, or else they must stil remain among the broken bones, and by this means the Coaptation and due Joyning together of the bones should be very much hindered.

Extension how  
to be perform-  
ed.

And therefore that the broken bone may be rightly conformed, it is requisite that both parts of the broken bone be distended backwards, or otherwise as need shall require; and this extension is by the Greeks called *Antitasis*. But that the extension may be rightly done, we must endeavour that it may be performed either with no pain at all, or no more then needs must. Now this will be done, if the member to be extended be placed in such a Figure as wherein the Muscles do nothing at all, but all of them are as it were idle and loosened; that so all the Fibres of the Muscles of the said member may be extended directly and straight forward: by which means there will be need of the less extension, and the whole business performed with very little or no pain.

Now this extension and distraction is to be done either by the labor and pains of one alone, or else by the Hands of many together; and this indeed likewise either by their

Hands only, or else also by certain Reins or Curbs, or by Swaths, or other Engines and devices used for this purpose. When the Finger is broken, or any other tender member, the extension may then be performed by the help and pains of one alone, who is to lay hold on one part of the broken member with his right Hand, and on the other part with the left, and so drawing them apart one from the other: or else it is to be done by two together, so that one of them may hold the part of the broken member; and the other extend and stretch it forth. But if the member that is broken be greater and more strong, then the help of many together will be needful; so that one may indeed with both Hands lay hold upon one part of the broken member, and another at the same time may likewise lay hold with both Hands on the other part of the broken member; that so they may by drawing towards them (one from the other) bring the said broken Member close together. And sometimes likewise there will be need of binding it round about with Swaths, Linen Clothes, and Staires; and of fitting these on all sides unto the said broken Member, like as with a Cord, or Noose; for the drawing of all which together, (that it may be rightly done, to wit, by drawing several waies, the one from the other) the help and assistance of divers at once will be very requisite. And oftentimes likewise, even then when there is occasion for a greater extension (but yet without any violence) there are together with these certain Engines to be administered; touching which, see *Hippocrat.* in his second B. of Fractures, Text 40. &c. and *Orribasius*, in his Tra<sup>t</sup>. de Machinam. and *Paracelsus*, in his 15. B. and 7. Chapt.

Now this Extension is either equal, or Unequal. We call that an equal extension, in the which the Member is equally extended from both sides of the Broken bone: but the extension wherein the Member is more extended from one side of the broken bone then from the other, we then call it an Unequal extension; and this hath two is place, when but only one of the two bones in the Ankle or the Elbow is broken: for that side is most to be extended in which the broken bone is contained.

Extension being  
made fold.

But now the *Diorthosis*, or Conformation, is the replacing and putting back again of the broken bone into its own place, and the right Coaptation or fitting together of the extreme parts of the broken bone; which is done, if after that the Member is so far forth extended that the bones to be replaced cannot be

Conforma-  
tion.



be brought to touch one another, the Chirurgion with both Hands lay hold on both parts; and that he then thrust back unto the right part the Member that is fallen forth unto the left; and so on the other side, that he thrust back unto the contrary part that Member that is fallen forth forward; and so on the Contrary; and that he never leave thrusting back the Eminencies or stickings out of the bones into their Cavities and hollow Seats, until the extremities, *i. e.* the ends of the bones be rightly united, and driven back into their proper places, and that the Member have recovered again its Natural Figure. But now these stickings out of the bones are not with any impulse or violence at all to be thrust back again into their Cavities, lest that by this violent handling of them they should be broken; but rather let them of their own accord (the extension being loosened) return back into their own seats; and let them be gently directed hereunto by the Hands of the Chirurgion. And all these things are (as soon as may be) to be done, before that an Inflammation happen: for if there chance to be any Inflammation, and then afterward the extension of the Member, and the replacing of the bones be attempted, a Convulsion may easily be excited.

But if the Chirurgion be not called until the Inflammation be already begun, so that by reason thereof the bringing back of the bones may not so much as be attempted, then by all manner of means he ought to oppose the Inflammation; and he is likewise to endeavour that it may speedily be removed by those Medicaments that are above propounded, in the *first Part*, and *5. Chap. of an Inflammation*. And in the mean time he ought to be very Sollicitous and Careful of the part affected, lest that it readily receive the fluxion: and this may be done by Repellers; and by placing the part in such a manner, and so handling it, that no pain at all may be brought upon the Patient. When the Inflammation is over and past, we must after that endeavour that the bones may be reduced unto their proper places.

But then if the extremities of the broken bones break forth, and stick out of the Skin, by what way and means such a Fracture is to be cured, we shall shew you in the *Chapter following*. When these things are thus performed, we ought then to take good notice, whether or no the bones be rightly fitted and placed together. Now it may be known by this (as *Hippocrat.* tells us in his *third B. de Officin. Medic. Text 24.*) if the Patient be no longer so much infested with pain, as before; if the eminencies of the bones now conjoined within themselves do no longer prick the

part; if while the broken part is touched by the Hand there be perceived no Cavity, no sticking out, or unevenness; and if the broken Member being compared with its fellow that is sound, (that is to say) the Shoulder with the Shoulder, the Thigh with the Thigh, and the Legg with the Legg, it be found to be almost equal, and like unto it, both in its Figure and Magnitude. Almost, I say, indeed, because that in the thickness there may be some kind of difference betwixt them; in regard that by reason of pain and the afflux of Humors, the broken Member doth for the most part swell up and grow somewhat big.

When we find and are sure that the bones are conformed, the extension is then by degrees to be remitted; and we are then to take care that by a fit binding up of the Member the bones when they are well fitted and placed together may so remain united, and rightly conformed. And this is to be done by two other operations, to wit, the binding up and the placing of the Member. Wherefore there are some who write, that the Curing of Fractures cannot be performed and compleatly finished, but by these four operations, *viz.* Extension, Conformation, Binding, and placing of the Member.

Notwithstanding, before ever we attempt to rowl any Swathe about the broken Member, some certain Medicaments are wont to be applied and laid on, for the preventing the afflux of Humors, and the Inflammation, and likewise for the helping forward of the *Callus* that is to be generated: but in this, for the matter thereof, Authors do something differ. *Hippocrates* maketh use of a *Rose Cerote*: *Celsus* useth Clothes dipt in Oyl and Wine. Others there are, who at the first lay upon the Fracture a *Cerote of Roses* with a broad Linen Cloth, and then afterward they put upon it a Linen Cloth well moystened in sharp black Wine, or else the Juyce of *Pomegranates*: others use hurds moystened thoroughly in the white of an Egg shaken well together, and then a little Squeezed: and others (which practice is now adaies most in use) do anoynt and spread upon a Linen Cloth a mixture made of the white of an Egg, and Astrigent Pouders of *Bole-Armenick*, *Dragons blood*, *Roses*, *Pomegranate flowers*, the *Roots of Consound*, *Frankincense*, and the like; and this they lay upon the Fracture. Which said Medicaments are in all the bindings so long to be continued, even until there shall be no further fear of an Inflammation, and that the Fracture begin now to be stable: and afterwards we are to apply (if it be in the Summer) the *Diapalma Emplaster*.

The binding up of Fractures.

plaster; but in the Winter the *Emplastrum Barbarum*; or some other that is in all respects suitable and Convenient. And this diversity of the Medicaments seems upon very good ground (and not without Cause) to have been brought into use and practise by Authors. For when there is an Indication of Strengthening and Establishing the Fracture (and that pain and the fear of an Inflammation forbid it not) the *white of an Egg*; and astringent Cataplasms are made use of: but if the Patient be afflicted with sore pain, then we are to use the *Cerote* and *Oyl of Roses*, and *Wine*. Or,

Take of the dead bead out of Lin-seed, Lin-seed powdered, unsalted butter, Roots of the greater Comfrey, of each four ounces; Bole Armenick, and Ceruss, of each one ounce; the whites of fifteen Eggs; Make a Cataplasme; let it be put upon the Fracture, and after two daies removed. Repeat this five times, one after another. Or,

Take of the finest Flower half a pound; Mastick, and Gum Arabick, of each one ounce; Mummy, and Bole Armenick, of each half an ounce; with the whites of Eggs make a Cataplasme.

Very useful likewise is the Emplaster of *John de Vigo*, which he mentioneth in his 8. B. and 6. Chapter. And *Guilhelm Fabricius* in his 4. Cent. Observat. 99. useth this Emplaster.

Take of *Slobanus* his Emplaster four ounces; Powder of the Root of the greater Comfrey, of Red Roses, and Myrtles, of each two drams; the Stone *Osteocolla* prepared, six drams: mingle them together over a gentle Fire, with a little of the Oyl of Roses, and make an Emplaster.

The common and vulgar Chirurgeons (in Fractures) are wont oftentimes (even at the very first) immediatly to apply the *Oxyroceum* Emplaster: or if this be not the very first of all, yet it is a Remedy that they never fail to make use of within a very few daies after the Fracture is made. But this cannot be done without much danger; as in the place alleadged *Fabricius* sheweth us by an example. For it being so that this Emplaster heateth the part affected, and thereby attracteth the blood and Humors, it must needs produce an itching, pain, Inflammation, and Gangrene; and especially in the Body that is Cholerick and Cacoehynical.

After that fit Medicaments have been imposed upon the part affected, then we must proceed to the binding of it up; and this must neither be over loose, (lest that the bones be again removed out of their places) neither over streight and hard, lest that it hinder the

afflux of the Aliment, and excite pain. Now this is to be performed with two Swaths; the one whereof (which may not unfitly be first moistened with *Oxyerate*) is to be cast over the Fracture, and upwards to be rowled round about it twice or thrice, (so that much of the sound part be taken in in the Swathing) that so the bones when they are set back again into their places may there be kept and continued; and likewise that the conflux of blood unto the affected part may by this means be prevented. The other (longer then the former by the one half) is to be rowled about in a Contrary manner; and being first of all cast upon the Fracture, (and beginning from the same) it is some certain times to be rowled about downward, and then again to be drawn up above the said Fracture; and at length to be carried toward the sound part lying above it. For so by this means, if it should so happen that by the first Swathe any Muscle should chance to be distorted and made to stand a wry towards some one part, it is amended by the second; the Humor is likewise pressed forth of the part; and the influx of the blood, (as well from the inferior, as the Superior parts) is hindered and prevented. For all bindings whatsoever have in them a power of pressing forth the Humors out of those parts upon which they are first of all cast, into those parts where they are ended.

And this binding which is performed by these two Swaths, is by *Hippocrates* called *Hypodesis*; and the Swathes themselves he calleth *Hypodesmidai*. But now that in the greater bones the binding may be the more stable and firm, certain coverings (which the more modern Authors term *Plagule* and *Splenia*) are to be put above upon them; and then after the putting on of these, the binding is to be made firm and strong by two equal Swath bands (which *Hippocrates* calleth *Epidesmoi*) of which the one is from the lower part carried upward toward the right hand, or toward the left; and the other is carried downward, the quite contrary way unto the former: which binding is by *Hippocrat.* termed *Epidesis*. And here we ought to be very cautious, that the binding be not either in an over-loose manner (for this will not sufficiently retrein and keep in their places the bones that are newly brought back) or else too hard and close; (for this may cause pain) but shunning the inconvenience of both the former, we are to make choyce of that middle way, that so we may enjoy the benefit and usefulness of both. And if a few Swathings about be not sufficient to contein and keep in the Fracture; then it will be best, for the more security, to add unto the number of them.

*Splinters to be put upon Fractures, to strengthen them.*

And that the bones when they are reduced unto their proper place may be there the better established and kept firm, (that they be not again moved out of their places, *Ferule* (or Splinters,) are to be put above upon them, if the Nature of the place affected will bear the same. For seeing that Swathes and the Coverings which they call *Splenia* are very flexible and yielding, they cannot possibly keep the Fracture firm and direct, but that it may easily happen, that whether the Patient wake or sleep, the Member may be moved. And therefore that in those motions which are not much heeded the Member may be kept firm, and held tight, there will be need of those things that are stiff, and are not easily bowed, and yet nevertheless not over weighty and ponderous. Unto which end and purpose (as *Hieronymus Fabricius* speaks) *Hippocrates* could not in all the world again (after his *Plagule* or Coverings) have invented and fitted us with better instruments then these *Ferule* or Splinters, that are both stiff and inflexible; and likewise very light, and not at all oppressing the part affected by their weight. But when we want these Splinters, we may instead thereof make use of thin pieces of Wood. And some there are that in the place of these *Ferule* make use of the Rinds or Barks of Trees. But if any will make use of these, let him look well to it, that they be not green, but thoroughly dried. For those that are green, when once they become dry, they then are contracted about the Fracture, and do excite pain; and sometimes also they again remove the bones out of their places; as *Guilhelm. Fabricius* by a peculiar example teacheth us, in his *fourth Century*, and 89. *Observat.*

*The placing of the broken Member.*

And Lastly, (if need so require) the pipe may likewise be administered unto the Member; touching which both *Hippocrates* and *Galen* make mention, in their *Treat.* of those things that ought to be done in the Curing of Fractures, Text 18. and the member is rightly to be placed; and we must see well to it, that its position be soft, equal and even, and turned upwards: soft, that so it may not press together the broken Member in that part, neither cause pain and inflammation: equal and even, that it may produce no pain, nor cause the Member to stand awry: and it must be turned upwards, that so the Humors by their weight tending downward may not blow unto the place affected. But more especially we must do our endeavour, that there may be observed a middle Figure of the Joyns; and so likewise a middle figuration of the Muscles: unto which end also there

may be sometimes administered certain little Coffers or Caskets (the Latines call them *Cap-sule*) which all the whole time of the Cure may receive and contain the broken Member. *Hippocrates* (in his *B. de Officin. Medic.* Text 3. and 30.) in giving a right and due Situation unto the Member, commandeth us to take notice of, and well to heed these three things, Rest, the Middle or Mean position, and Custom. Rest indeed, that so such a Situation of the Member may be chosen, as a man is wont to keep at that time when he is most free from all manner of business, and most addiceth himself to ease and idleness. But the middle Situation is a posture betwixt extreme distention, and Contraction; and yet nevertheless not alwaies exactly, but such as cometh nearest unto the mean or middle position. As for example; in the Arm, that is to be accounted for the middle Situation, which doth not Constitute a right Angle in the Elbow, but rather an obtuse and blunt Angle; and such as comes something nigh unto a stretching of it forth: like as we see men when they are quiet and idle, they hold not their Arms exactly in a just middle posture betwixt being altogether stretched forth straight, and wholly bowed and bent together; but somewhat more inclining and tending toward a stretching of it forth: which Figure is therefore most pleasing unto them, in regard that it is most free from pain. And then lastly, Custom is also much to be regarded and lookt upon; because that no other habit is so easily born as that unto which we have accustomed our selves. Unto which we may likewise add a fourth, out of the same *Hippocrates*, (in his *1 B. of Fractures*, and 1 Text) to wit, that such a state of the Muscle is to be chosen, under which the broken bones may be drawn divers and several waies, without any great adoe, or offering violence unto them; and such as when the Member is contained under that habit, it is then free from all pain. He only doth both these, who so Figureth and placeth the Muscles, that their Fibres may be direct, and stretched forth in a straight manner. Now they may be said to be direct, and directly extended, when the whole Muscle is placed in one part of the Member. For if the Muscle that hath its beginning in the interior part be so placed that the Situation thereof be in the middle from the interior part, and extreme from the exterior; or so, that the Situation of it be in the midst from the superior part, and extreme from the exterior, by this means it is wrapped together about the Member, and so extended.

Now when the binding is right, and performed as it ought to be, it is known by this; (as



as Hippocrates tells us, in his 1 B. of *Fractures*) first of all, by the moan and complaint made by the sick person, when you ask him whether he be pressed too hard by the said binding, and he shall answer, that he is indeed pressed, but lightly, (and so that he can well endure it) and that especially in the place where the Fracture is. And therefore whosoever he be that hath his Fracture rightly bound up, he must of Necessity confess that these things are so. But when the Patient is abundantly troubled and pained under these swathes, they are then speedily to be loosened, and more fitly to be bound; lest that from the too hard binding dangerous symptoms should happen to arise. But on the other side, if the windings about of the swathes be looser than is meet, and that the Patient shall answer that he feels not the swathing at all, the swathes are then to be drawn somewhat harder; in regard that these bindings if they be over loose, they cannot prevent the Members being depraved in that part where the Fracture is.

There are also other signs of a Moderate binding, and when it is as it ought to be. If the same day and night in which he was bound up with these swathes he seemeth to himself not to be lightly bound, but somewhat hard and streight; and the day following, a soft and small tumor arise in the extremity of the Member. For the smallness of the swelling and softness sheweth that there is something pressed forth (by the binding) from the part affected unto the extremity and utmost part of the Member. But if there appear no swelling, it sheweth that the fracture was not bound hard enough: and if the swelling be great and hard (that is, such as wil not readily yield unto the touch) that is present in the extreme or utmost part of the Member; it then giveth us a sure sign and token, that the part affected is too hard swathed and bound up.

And therefore if we find the signs of a due and fit binding up of the fracture, and that there be no considerable pain present, neither any inflammation or exulceration suspected, the rest of the work (which is the producing of a *Callus*, by the which the broken bones are joyned together) is to be committed to Nature, whose work it is; and the binding not to be loosened before the third day. But on the third day let the swathes be loosened, and again rowled about the fracture, to the end they may both be drawn harder and closer upon the place affected; as also that there may be opened a passage forth for the humors and vapours contained under the skin: which that they may be scattered, and that there may be no itching excited (or if there be a

ny Itching that infesteth the Party) Hippocrates wil have the Member to be bathed in warm water (or the water to be poured upon it,) that so the pores may be opened. But if we be slow in the loosening of the binding, there arise from thence oftentimes great inconveniences; to wit, an exulceration of the part, a putridness, and Gangrene, yea and even the hazard and danger of the life. Examples whereof we meet with in *Guilhelm. Fabricius*, in his second Century, and *91. Observat.* And therefore he adviseth us that every second, or at least every third day, the binding be alwaies loosened: and that although after the seventh day there be no such urgent Necessity of the often loosening the fracture, yet Nevertheless his own practise was every fourth day to loosen the swathbands; and (as he writeth) his Custom was to take an exact view of the part affected. And this binding is to be continued until such time as the *Callus* be bred, and the fracture healed; which in the Thigh is wont to be done in fourty days, in the shoulder and Ankle in thirty, in the *Radius* and Elbow in twenty, and in the bones of the Fingers in five days. But yet this time cannot be so easily and precisely determined in all of them (as we told you in the *Prognosticks*) but it much varyeth according to the Age, Constitution of body, time of the year, and the Nature and Condition of the Fracture it self: for a fracture is much sooner cured in a young person, then in one that is Aged; and sooner in the spring time, then in the summer.

But in the Mean time (While these things are in doing) universal Medicaments are not to be neglected; to wit, the opening of a vein, and purgation, even according as this or that Constitution of the patient shal require. And all these things are to be done for this end, that so the bones may be conglutinated. Now this is done by the benefit of the *Callus*; which whether it be something that is heterogeneous, or else in its substance like unto the bones, we have shewn you above,

part. 4. Chap. 4. But now the generating and production of the *Callus* (by which the bones are conglutinated and made to grow together) it is the work of Nature: but yet the Physician may and ought to help, and assist Nature in this her operation; and this he may do, if he take care to prevent and keep off inflammations, or the like Accidents that might any way hurt the substance and Temperament of the Member; and that the Aliment it self by drying Medicaments be so disposed, that it may thereby the sooner be changed into a *Callus*. Now this may almost

wholly be effected by the Medicaments above mentioned; in the place whereof (after a few daies) there are to succeed likewise the *Emplaster Diapalma*, the *Emplastrum Barbarum*, *Oxycroceum*, the black *Emplaster*, and the like.

And furthermore let the Physitian endeavour that there may be a sufficient supply of a matter fit for the breeding of the *Callus*. Unto which end, the Food administred unto the Patient let it be somewhat more plentifully given then formerly; and let it be of a good and somewhat a Tenacious Juicy; such as proceeds from Rice, Wheat, and the like. But because that before the twelfth day there is scarcely ever any *Callus* generated, or that so much as beginneth to breed; and moreover that at first there are many Symptoms to be feared: therefore this full Dyet is not presently to be allowed of in the very beginning, but a more sparing Dyet is to be observed; yea and (if need require) blood is to be drawn forth by opening a Vein, or purgation to be ordered unto the Patient; and then after this, in the end (as we said before) when the *Callus* beginneth to be generated, a more full Dyet is to be allowed him.

And there are wont likewise some Medicaments to be administred inwardly, which conduce much unto the more speedy generating and producing of the *Callus*; as the *Powder* and *Juice* of *Agrimony Roots*. And very many there are, that commend most highly the *Osteocolla* stone before spoken of; of which beaten small into a powder they oftentimes give one dram, with *Comfrey Water*. But in such as are young, and those that are of a good habit, this *Callus* groweth and increaseth too much by this full Dyet: wherefore it is not to be allowed unto them without much caution; but only unto such as are more stricken in yeers. Touching which thing, as also touching the use of Meats viscid and tenacious (which most Physicians conceive are to be appointed in Fractures) you may read *Guilhelm. Fabricius*, in his 1. *Century*, *Observat.* 90. 91. and 92.

There may likewise be Decoctions prepared, of the *Roots* of *Consound*, (both the greater and the less) *Dragon-wort*, *Agrimony*, and *Primerose*. As,

Take *Roots* of *Consound*, and *Dragon-wort*, of each one ounce; *Stork* bill, one handfull; *Savine*, half a handfull; *Mace*, half an ounce; *Zedaary* and *Galangal*, of each two drams; boyl them in *Wine* in a double vessel: and let the Patient drink twice a day of the straining.

The same *Fabricius* (in his 3. *Centur.* and 90. *Observat.*) makes use of this Medicament.

Take the *Offisrage Stone* carefully prepared, one ounce; *Choice Cinamom*, three drams; *Sugar*, two ounces; Mingle, and beat them into a very fine powder: give two drams hereof in *Flesh broth* every day in the morning. And for external Remedies, be commended such as these.

Take *Oyl* of *Earth-worms*, two ounces; *Grains* of *Juniper*, two drams; the *Juice* of *Earth-worms*, one ounce; Mingle them, and make a *Liniment*, with which anoint the *Fracture*. Or,

Take *Vigo's Emplaster* for broken bones, two ounces; *Oxycroceum*, half an ounce; the *Osteocolla* stone prepared, one ounce and half; *Earth-worms* prepared, and powdered, one ounce; with as much of the *Oyl* of *Earth-worms* as will suffice; make an *Emplaster*, and lay it upon the place affected.

When the *Callus* that is bred is come unto its just magnitude, it is then to be confirmed by Medicaments that Corroborate: and therefore such an *Emplaster* as this is to be laid on.

Take *Oyl* of *Roses*, two ounces; *Wax*, three ounces and half; the *Powder* of *Resin*, three ounces; *Colophony*, *Mastick*, *Frankincense*, of each half an ounce; *Cypress Nuts*, and the *Root* of *Madder*, of each one dram; *Saffron*, half a dram; Mingle them, and make a *Cerote*, which may be spread upon a *Linen Cloth*, or a piece of *Leather*, and so applied.

### The Diet.

And as for matter of Dyet, there ought to be likewise a good and an exact Course, such as before we told you of in Wounds. For if Nature be not offended either by the quantity or the quality of the Food, she will then more rightly discharge her Office and part in the generating of the *Callus*. And indeed some there are who appoint Meats viscid and clammy, of the Feet, Heads, and intestines of some of the Creatures. But we may well fear, lest that from such like Meats as these there may be bred a thick and viscidus Chile that may afterwards breed obstructions in the Liver and the Veins, and may infect the whole Mass of Blood; like as *Guilhelm. Fabricius* gives us an instance of this very thing, (in his first *Cent.* and 92. *Observation*) in a certain person (a man forty years old) who by the use of such kind of meats fell first into a Cachexy, and soon after into a Dropsie, and of this Dropsie he died. And we have sufficiently found by experience, that many sick persons in this Case have without the use of any such Food been perfectly recovered.

## Chap. 2. Of a Fracture with a Wound.

**T**He main and chief Difference of a Fracture (and that which very much varieth the Cure) is a Fracture with a Wound. Now this happeneth when the sharp Eminencies or points of the broken bones do perforate the flesh that lieth upon them. Which whensoever it happeneth, the Member is made shorter then it was before: but when the naked and bare bones are restored again unto their proper places, the Member then returneth unto its pristine Longitude. And yet nevertheless sometimes these like fractures happen by some cutting Weapon, when by it not only the flesh, but even the very bone it self is cut.

But now in these Fractures with a Wound, the bone is sometimes made naked; and sometimes again it is not left altogether bare: and moreover sometimes also we fear the falling out of the bone, or some Fragment thereof; but then sometimes again we fear no such thing.

## Prognosticks.

1. But now such like Fractures are yet far more dangerous, if they happen to be with the Flesh and Skin lying over it remaining still whole and sound. For that perforation exciteth a pain and an Inflammation of the Skin and Flesh; and so the Muscles that are now affected with this Inflammation are forced to suffer a double extension; one that is caused by the Inflammation; the other, that which happeneth unto them from these things that befall them while they are returning unto their former length.

2. But now this danger is so much the greater by how much the parts that are broken and shattered are more noble and principal; as the Muscles, Nerves, Veins, and Arteries.

3. And from hence it is, that a Fracture in the Thigh and Shoulders, with a Wound, and the falling out of a bone, is the most dangerous of all: touching which Hippocrates thus, in his third B. of Fractures, Text 47. *But they seldom or never escape (saith he) whose bones (either of the Arm or Thigh) have fallen outwardly: for as these bones are very great, and very full of Marrow: so likewise there are besides these many other things wounded that are of very great moment; to wit, the Nerves, Muscles, and Veins; whereupon also it is, that if you put them back, Convulsions are wont to be excited: but then again if you do not put them back into their former places, there will*

*then arise acute and Cholerick Feavers, with a sighing, and a blackness of the place affected. Yet notwithstanding they do not less escape, in whom we neither put them back, nor so much as attempt the doing of it. But furthermore, they also are more likely to escape, who have the lower bone, then those that have their upper bone fallen forth outwardly. And they likewise do sometimes escape with life (but this is very rare) that have these bones replaced and set where they were before. And in Text 41. he saith thus: And yet notwithstanding a Convulsion is rather produced if these bones be restored unto their places, then if there be no possibility of restoring and replacing them. And Celsus in his 8. B. and 10. Chapt. saith; That it is yet somewhat more grievous, when unto the Fracture of a bone there is likewise added a Wound of the flesh, and especially if the Muscles of the Thigh or of the Shoulder be sensible thereof: for these have alwaies the much more grievous Inflammations; and they likewise have Cancers more apt and ready to seize upon them. Now the danger is much more augmented if the bone fall forth from some domestick (if I may so term it) & interior part, then if it be from a wild external part; for in the former there are found parts of a far greater account and value.*

Whereupon it is that Hippocrates (in his 3 B. of Fractures, and 47. Text) writeth; *Neither is it moreover a matter (saith he) of little Consequence whether or no the bone break forth unto the exterior part of the Arm or Thigh; in regard that through the interior parts of them there are carried along many and those principal) Veins; of which if any chance to be wounded, and battered together, they Choak and Throttle the party; but the Veins that are conveyed through the Exterior parts, as they are fewer, so they are less considerable.*

4. A Fracture with a Wound, if it be made with some cutting Weapon, is dangerous, if it be a great bone that is cut, such as is that of the Thigh or the Shoulder. For such like bones as these (especially if the incision be direct and straight) will very hardly be brought to grow together again; because that by this cutting Weapon the pores of the bone, through which the Aliment for the breeding of the Callus did formerly pass, are in a manner obstructed, and so the Callus is the longer ere it be generated. And moreover, in regard that such a Fracture is equal, the broken bones are most difficultly kept from being moved; and so by this the Coalition and growing together of these bones is very much impeded.

## The Cure in General.

We have here two Indications given us: the former whereof is, that the bones be  
Kkk 2 again



again restored unto their own places, and there exactly Joyned together; and the other is, that the Wound may be healed. The replacing of the bones is here altogether difficult, by reason of the parts that are wounded which without great pain, and fear of a convulsion, cannot be extended. Now the way and means to return these bones unto their places again, is, first of all by extending them sufficiently, but yet without all kind of violence: which if it cannot otherwise sufficiently be done, then we must have ready at hand firm and strong Iron Instruments, (like unto Bars) something different in their bigness one from the other; out of which some one of them that is fit and convenient, in the inferiour part is to be administred unto the lower part of the broken bone, but in the superior part unto the upper part of the said broken bone, (like unto an Iron Sparre or Leaver) and so by this means the broken bones shall be forced and driven again into their proper places: touching which Hippocrates (in the 3. B. of *Fractions*, Text 39.) writeth in these words: *If (saith he) the bone also that is fallen forth upon another bone leave not any fit place for the Iron Sparre; or if that it be so sharp that it start away from it, we must then with a File hollow the said broken bone, until there be a place made for the Iron Sparre, and that it firmly stick unto it.* And the truth is, all these things are to be done instantly, even the very first day, before any Inflammation to arise. For if this should happen, neither the extension nor such putting back of the bones can be so much as attempted without very great danger. If therefore the Chirurgion be not sent for even at the very first, and that he come not until there now plainly appear to be present an Inflammation, he ought to defer the putting back of the bones into their places, until he find the Inflammation over and gone. I my self once on a time was present at the Curing of a certain Peasant, who getting up into a Tree to beat down the Acorns, fell down from it, and brake his Leg neer unto the Ankle, insomuch that the bone sticking our rested it self and lay upon the Ankle bone. And he not having in a readiness a fit and expert Chirurgion, an Inflammation and Gangrene happened, which wasted and consumed almost all the Skin and Flesh about the Ankle. He was then carried into the City, where the Gangrene ceasing, the bone standing forth by the Iron Sparre or leaver was lifted up, and restored unto its former place; and then after this all things else that were necessary being performed, the Fracture and Wound were healed.

But if it happen that any smal part of the

bone shall so stick out that it cannot easily be put back again into its proper place, but that by reason of its various Fraction one part and portion of the bone be an impediment unto another; and that likewise it be not thought fit to attempt any stronger extension of the soft parts, by reason of the pain and Convulsion that may thence be feared; and that the bones may in their conformation rent and tear those parts that lie neer them, and thereby produce pain; in all these regards Hippocrates (in his 3. B. of *Fractions*, Text 4.) adviseth us to cut them off, either with the cutting File, or with the Saw, as it shall be thought most convenient, and as may be done with most opportunity. And so likewise, if any portion of the bone break the Flesh, and excite pains, (so that we cannot so much as attempt the replacing of them without a greater disruption) and excruciating tortures in the highest degree, even in this Case also we ought to cut off the bone. But then withal, lest that what happeneth through necessity in the Artificial operation should be imputed unto the Error of the Physician, the Patient and the by-standers are to be foretold that that part will be shorter then before. And this likewise Hippocrates (in his 3. B. of *Fractions*, and 46. Text) admonisheth us of, whiles he saith, *That it is also fit that we know this, that of necessity the Bodies must there be made shorter, where the broken bones are diminished, that is to say, Cured by being cut off.* But now in such Fractures as these that are Joyned together with the Wound of the Skin and Flesh lying upon them, we must look well to it likewise, (before ever we Joyn the bones together, and also after that they are thus Joyned) that nothing at all stick betwixt the broken bones, which may any way hinder the Conglutination: and if any thing be found sticking there, (whether it be some smal part of a bone, or any thing else) it is forthwith to be taken out; but this must not be done with any violence, lest that a pain, Inflammation, or Convulsion should be excited. And therefore if at the first, (even in the very beginning) this cannot be performed without violence and pain, it will be more advisedly done of us to defer it, for Nature her self will at length thrust forth every thing that is Extraneous, and that should not be there; and yet nevertheless we ought to help Nature (as we can) with attracting Medicaments.

But now as for the manner how the binding up of such a like Fracture with a Wound ought to be instituted and ordered, in this neither the Ancients, nor yet the more Modern Authors, do agree among themselves:

*The binding how to be ordered.*

for

for some of them are wont to binde up the Fracture, as otherwise they did when it was without a Wound; that so the Wound may be likewise covered; and they also loosen this binding every third day: and some there are that rowl about the Swathes in such a manner, that the Wound is not at all comprehended within them, but left naked; so that we may from day to day use all due means for the curing thereof, without any frequent binding up and loosening of the whole Fracture. Others there are that use fewer Swathes, and bind up the Fracture after the usual and ordinary manner: but then others there be that administer broader and more Swathes; that so by the number of the Swathes they may accomplish that which might have been done with fewer when hard and streightly rowled. And some there are that altogether neglect and disregard the splinters; others there be that make great use of them; and of those that make use of them, some apply them a good distance off from the wound; but others apply them even upon the very wound itself; but then in that part that lyeth upon the wound they make a hole, that so the Pus may pass forth thereat, and that such Medicaments as are needful may be applied thorow the same. *Cesar Magatus* (in his *B. of Wounds, Chapt. 6.*) insisteth still in his own Method; and here likewise in this case he hath no regard at all unto the wound; and unless there happen to follow hereupon any thing else that may force him to do otherwise he deferreth the loosening until the fifteenth day, and sometimes unto the thirtieth, according as the quality of the fracture, and the Nature of the wound seem to perswade; and look how much the longer time the fracture requireth for the making of it firm and strong, so much the longer doth he defer the loosening. And (as he writeth) the generating of the Pus in the wound doth not at all deter him. For (saith he) if it be cured in this manner, there is then a far less quantity thereof generated by reason of the heat of the strengthening Coverings; & as for that which is bred without the wound, he writeth that nature expelleth forth this. And that this may be the more easily done, he openeth and maketh slits (over against the wound) thorow all the linen Clothes by certain small cuttings; thorow which the Sanies (or thin excrement) that is bred may be driven forth.

Now although that in such operations and handy-works we may oftentimes in divers and different manners attain unto the same desired end; yet notwithstanding both *Hippocrates*, and likewise all the more Skilful and experienced Chirurgeons, take it for a

most certain and undoubted truth, that the first binding ought so to be instituted, that the wound may not be left naked and bare; but that it may be comprehended within the swathe. And therefore the swathe is first of all indeed to be cast upon the Wound itself: for if it be otherwise done, the humors will be pressed forth from the Superior part downward toward the wound, and many dangerous Symptoms are from thence excited. And the danger of thus doing we may see experimentally even in one that is found and free from any such fracture. For if in any such person you binde any one part both above and beneath, and leave the middle part untouched, then the said middle part by the Humors that are from the adjacent Members forced and pressed unto them, is lifted up into a Tumor; and from the influx of the Humors (as we see) it soon changeth its color. And albeit that in the first binding the Member shall be all of it wrapt up within the Swathes; yet notwithstanding there will not from hence be any cause to fear the least danger; in regard that for the first three daies there floweth forth but very little either of Pus or Sanies, that is to say, the thick or thin Excrements. But here also even in this kind of binding it is to be observed, that we are to make use of a Swathe that is somewhat broader than ordinary, and then otherwise when there is no Wound present; and that there be indeed a sufficient compression made; it being then to be accounted sufficient, when it can retein and keep together the bones: but yet it must be somewhat less then if there were present no Wound; lest that the wounded part being pressed together, a pain and Inflammation should thence be excited: and the number of the Swathes may compensate the more loose and easie binding and rowling of them; since that it is far more safe to rowl about the Swathes oftner, then any way to hurt the part by Compression.

On the third day the binding is to be loosened; and then it is again to be ordered after the first manner. And then most sicly and conveniently there may be a hole cut through the Emplaster or Cataplasme that is imposed upon the Fracture; yea and in the midst of the very Swathes there is a hole to be left; (and so also in the Splinters, if there shall be any applied) that so there may fitting Medicaments be administered unto the Wound; and that the Wound may also be thoroughly cleansed and purged, without any loosening of the Fracture. And this way of binding is lively set forth unto us by *Ambrose Parry*, in his *14. B. Chapt. 18. and 23.* For whereas the broken bones (that are wont to perforate

perforate the Skin) are not alwaies so sharp (as in those Fractures that are made by the Sword) that together with them the flesh is bruised together, and a hole made through it; which when of necessity it must be turned into *Pus*, abundance of the said *Pus* must necessarily be bred; which if it be retained (as needs it must, if the Wound be wholly bound up) soon becometh sharp, and so excitech an itching and pain, and divers other mischiefs; although that Nature be strong and vigorous; yet nevertheless the generating of abundance of the said *Pus* cannot be avoided; since that all whatsoever is bruised must of necessity be converted into *Pus*.

And although that *Magarus* doth cut and make little slits in all the Linen that he putteth upon the Wound, that so there may be a free and ready passage for the *Pus*; yet notwithstanding all the inconveniences that proceed from the retention of the *Pus* cannot by this means be prevented. For if those Swathes and Linen Clothes shal not be shifted before the fiftenth, and sometimes even the thirtieth day, they must certainly be very much defiled and polluted by the *Pus* and *Sanies*; whereupon in the wounded part an itching, pain, and exulceration may follow. But then on the other side, if the Swathes be still kept whole, and not at all cut, and thereupon to be loosened every third day; it is then to be feared, lest that the *Pus* retained may in the mean time excite some mischief or other; and also lest that in so many loosnings and new bindings up again the bones may be removed out of their places, and having been welset and joyned together they should again be depraved and disordered: which may easily be avoided, if the binding be but seldom loosened, and the Wound kept open. And yet notwithstanding as often as the Wound is dressed, it may be covered over with a new Swathe, (which may contain both Medicaments and those Coverings they call *Splenia*) and may defend the Wound from the external Air; and it may be loosened as often as there is any need thereof; but then indeed it must be without any agitation, shaking, or violent moving of the broken Member.

And there must also no Splinters be applied, lest that they too much compress the Wound, and beget a pain and Inflammation. And if any will needs apply them, yet notwithstanding they are not to be put upon the very Wound, but near unto the same. Yet the truth is, the number of the Swathes may very well supply the use of these *Ferula* or Splinters. And these things are thus simply to be performed, if there be neither any bone

naked and bare, and that we fear not the impostumating and falling out of any broken piece and fragment of the bone.

**Chap. 3. Of a Fracture with a Wound, in which there is no bone made bare, and yet nevertheless a Cause to fear the falling forth of some fragments of the broken bone.**

**I**T happeneth oftentimes notwithstanding in Fractures with Wounds that there is no bone at all left naked and bare: and yet nevertheless we may have great cause to fear that some broken bone may impostumate and drop forth: and this is done when the bones are made dry and withered, so that they cannot be agglutinated unto the sound bone; or in a Fracture, when they are so separated from the rest of the bone, that they can no more be joyned therewith. For then Nature endeavoureth to thrust forth whatsoever is troublefom and burdenfom unto her, and what cannot be united unto the rest of the bones; neither is she at rest until whatsoever offendeth be wholly expelled out of the Body: and this oftentimes she doth at length perform although it be a long time first.

Now this happeneth, when the bones are either corrupted by the *Sanies*, or else when they are altered by the external Air; or else likewise when they are so separated (in a Fracture) from the rest of the bones, that they cannot possibly be any more conjoyned with them.

**Signs Diagnostick.**

Now what the Signs are of a bone like to be impostumated, and to drop forth, we are told by *Hippocrates* in his 3. *B. of Fractures*, Text 18. The First Sign is this, that there floweth forth a greater abundance of the *Sanies* (or thin Excrement) then could rationally be expected from the greatness and Constitution of the Wound. Secondly, That the Lips of the wound do not meet together; or if they do at any time meet together, yet they soon seem as it were to be broken, and to be stirred up and provoked to excretion; and they become as it were loose and spungy; and there is perceived in the wounded part a certain silent motion. For Nature doth not entirely heal a Wound, when there is something remaining within that cannot possibly be agglutinated with the rest. Thirdly, If the bone be left bare of Flesh, it is then altogether



together a Sign of its separation and dropping forth; in regard that then it may be altered and corrupted by the external Air, and that the Veins and Arteries (which convey the Aliment) can no longer run forth unto it. And Fourthly, It is then likewise a Sign that the bones will fall out, if they be broken and shattered into many small pieces and fragments: for then they cannot all of them be easily Conglutinated.

### Prognosticks.

1. It is a Sign of an *Abscession* instantly to follow, if there be good Flesh bred in the sides of the sound bone.

2. But the time in which the bones are wont to recede and fall forth is various, and not at all times alike. For in those of a tender Age, and in the Summer, and if the bone be not very great, it is twenty, thirty, or perhaps forty daies, ere the bone will be separated and fall forth. But if the bone be any thing great, in one of a full and ripe Age, and in the Winter time, it is usually three-score daies, yea and sometimes longer, ere it impostumate and drop forth.

### The Cure.

If the bone that is like to fall forth be moved out of its place, and that it stick in the very Wound, it is immediatly (as we told you before) to be drawn forth with the *Volsella* or Pincers; if it may indeed be so drawn forth without any pain and violence: but otherwise the whole business is to be committed unto Nature, which by degrees will at the length separate that which cannot be agglutinated. And yet nevertheless she is to be assisted and holpen by the Physician; and therefore the binding ought to be instituted in a loose manner, and often unbound, that so the Pus and filth may not be deteined, but that it may freely and easily flow forth. And likewise there are no Splinters to be imposed upon that place by which the bone is like to fall forth, lest that by compression they cause pain.

And so also there are Medicaments to be laid upon the Wound, that have in them a power of drawing forth of the Wound the bones and whatsoever is extraneous and no way belonging unto the part affected; and such Medicaments we have above mentioned in the place alleadged.

But if there be some great and extraordinary portion of the bone like to drop forth, and this because that the parts of the broken bone cannot be again composed and made to Joyn with the other; (for whatsoever bones shall refuse to be replaced, we ought to know that these will separate and fall forth; as also those

that are naked and bare of Flesh; as Hippocrates writeth (in his *B. of Fractures*, Sect. 3. Text 44.) such like wounded parts are to be handled with all gentleness. For by reason of motion and compression there happen many times most vehement pains, the small parts of the broken bone not rightly placed together pricking the parts that lie neer unto them, these parts being very sensible of pain: whereupon it is that those bindings that in other Fractures are very convenient, in such Fractures as these would excite most vehement pains.

Now Hippocrates (as he tells us in his *B. of Fractures*, Section 3. Text 21.) that so he might avoid these inconveniences, maketh no use of the Swathe, lest that he should press together the part too much, and lest if the part should at all be lifted up he might excite pain; but having finished the replacing of the bones, (as far as it may be done) and having taken away all those fragments of bones that may be taken away, he then applyeth unto the Wound the pitched Cerot, or some other Cerot fit to be put upon bloody Wounds: and then after he hath thus done, because that there is an imminent danger of a fluxion, from the weakness of the part, and from pain, (and likewise that the flux of Humors may be driven back, the part strengthened, & the Fracture made firm and stable) he putteth round about it those coverings we call *Splenias*, doubled; or the *Plagula* of chin Linen; in breadth half as broad as half the Palm of the Hand, and no narrower; but then in length a little shorter then that they should come twice about the wounded Member, but yet something longer then to compass about but once only. For if they should be longer, then of necessity (when the Medicaments are renewed) the Member must be lifted up: and if they were shorter, they could not then sufficiently strengthen and establish the Fracture. Those Linen Clothes being first thoroughly moistened in sharp or sour Wine, and so many in number as are necessary, (that so there may be place without them) are so to be applied unto the Member, that their Heads may be drawn by the place affected, not round and Circularly; but a little sloping, so as that from the Contrary part (where they began,) they may be brought together the one to the other, after the similitude of the letter X. and that so they may cut cross one another like unto the aforesaid Letter, by drawing the right Head unto the left part, and the left Head unto the right part. Which *Splenias*, in regard that they are not very long, and may be taken away, that the part may not be lifted up, in this respect they are very convenient. And instead

instead of the Wine we may likewise very fitly administer other Medicaments also, which are as good for the very same use.

There may likewise notwithstanding be administered a binding which is compleated with once only rowling about; and it may be performed with a Swathe, which is to be folded together with a twice or thrice doubled Linen Cloth, (after the manner of a Cross-cloth) and so very dexterously to be sewed together in their sides; and so broad that it may cover the whole Wound.

But now because that binding by which the bones (when they are again set in their places) are so to be kept from starting out of their said places hath not any being or use in this case, therefore those Wooden Coffers, Pipes, or the like engines are to be administered, that they may keep the broken part in its proper place. And yet notwithstanding this is carefully to be heeded, that nothing that is hard be immediatly applied unto the part; but that betwixt the wounded part and those Engines there be interposed some soft *Splenia* coverings, that so there may be no compression made: touching which see *Hippocrates*, in his 3. B. of *Fractures*, and 23. Text.

And Lastly, If the extremities or ends of the broken bones break out and stick forth without the Skin, we are then to do our utmost endeavour that they may not be altered and corrupted by the external Air, so that afterward they must of necessity be cut off; and therefore we must labour that they may forthwith be replaced, and covered with their Natural covering the Skin: which in what manner it ought to be performed, we have told you above in the Second Chapter.

#### Chap. 4. Of the Preternatural Affects that happen unto Fractures.

**B**UT now, in regard that there are various Preternatural affects that are wont to succeed and follow upon Fractures, (which partly retard the Cure, and partly remain even after the Fracture is cured, and are to be taken away) we shall likewise treat of these. Now there are many of these like affects, as Pain, Inflammation, and a Gangrene following upon this, an Itching, an Excoriation, an Exulceration, a depraved Figure of the Member, a *Callus* either greater or less than what Justly it ought to be, an Extenuation of the Member, slenderness, and debility; touching all which we intend now to speak.

#### Pain.

If there be any pain present, this is altogether to be asswaged and taken away; for otherwise by reason hereof the Humor will flow together unto the part affected, and so an Inflammation and other mischiefs will be excited. But now that it may the better be taken away, we are to consider from what Cause it proceedeth, and that (if possibly it may be) is instantly to be removed. And therefore we are to be well advised, whether this pain be from some bone that pricketh, or from the Swathe too hard drawn; or whether it be from the ill Situation of the Member; or else from the afflux of the Humors.

If the pain arise from a bone that pricketh, (and this is known by the light and gentle handling of the part, and the pricking pain following thereupon) then the Swathes are to be loosened, and the pricking bone is either to be put back into its proper place, or (if it may conveniently be done) taken forth, or cut off. Touching which *Celsus* thus, in his 8. B. and 10. Chapter. *A Fracture* (saith he) *doth sometimes vex the Flesh with certain sharp pricks as it were, which being known by the itching and pricking, it will be best to open it, for there is a necessity of cutting off these sharp pricks.*

If the pain arise from the over hard binding of the Swathes; this is found by the swelling that appeareth in the extremity of the part, and the sick person complaineth that he is vehemently pressed. And then the Swathes are forthwith to be loosened, and the binding to be made more easie.

If the pain proceed from an ill Situation and posture of the Member, the sick person doth easily discover this; and it requireth a change of the Situation; which ought so to be ordered, that the Patient may now confess himself that he is without pain.

And Lastly, If the pain be from the afflux of the Humors, the way and means of curing it is the very same with that of an Inflammation in its beginning; as we shall by and by shew you.

#### Inflammation.

For if there be a pain excited from the afflux of the Humors and an Inflammation follow thereupon; we are then to oppose the very first beginning of the Inflammation, in that manner as we told you above, in the first part, and 5. Chap. To wit, the Member that is bound up must be loosened, and fomented with the Oyl of Roses, either alone, or mingled with the white of an Egg: or else such a like Cataplasma is to be laid on.

Take

Take Barley meal, three ounces; the powder of Marsh-Mallow Roots, and Camomile flowers, of each one ounce and half; Roses, one ounce; boyl them in a sufficient quantity of Water and sower Wine; and then add Oyl of Roses, three ounces; and make a Cataplasme. And for the rest, see in the place alleadged.

But before the Inflammation be ceased, the part is not to be bound up, or certainly, (at least) not to be hard bound; neither are the Splinters, nor any one of those kind of Engines, to be imposed; unless it be that they may prop up the member, and contain the Medicaments.

### Gangrene.

And there happeneth oftentimes likewise unto Fractures (and especially those that are made with a Wound,) a Contusion of the Skin, by reason of the Inflammation following thereupon; which how and in what manner it is to be Cured we have already told you above, in the 2. Part, and 19. Chapter.

### Itching and Excoriation.

But if from the Sanies there be caused an Itching in the Wound, as also an Excoriation, and Exulceration, then Water temperatly hot is to be made use of, that the Sanies may be washed away, and that it may be called forth and dissipated: and there may be likewise taken such Water as is moderately salt, which cleanseth more powerfully.

And afterward let the place be anointed with the white Camphorate Unguent, with the Unguent of Roses, of Licharge, of Diapompholyx, and the like: unto which likewise there may be added the Juyce of Plantane, or Nightshade.

### Chap. 5. Of Distorted and ill set Bones.

And very often likewise it chanceth that after the broken bones are again made to grow together they receive not their former wonted and convenient Figure, but are distorted and writhed; whereupon the motion of the Member is much hindered, and a lameness or halting caused in the Foot; or else in the Arms their laying hold on any thing is hurt. Now this cometh to pass, either from the unskillfulness and neglect of the Chirurgion who setteth the bones, and bindeth up the Fracture; or else through the inordinate motions of the sick person.

### The Cure.

This evil is Cured (if the Callus be new and hath not been bred above six moneths, and the sick person of a ripe age, and strong, and the broken bone not very great, and the action of the Member not much hurt) if the Callus be again broken, and the bones rightly fitted and set together. Now this breaking of the Callus is the more easily done, if the Callus be first for some daies fomented with the Decoction of Emollient Herbs, as for instance, the Roots and Leaves of Marsh-Mallows, Mal-lows, Figs fat and dry: and then let a Cataplasme of the same Roots and Herbs be afterwards laid on, or else an Emollient Emplaster. Or else you may administer some such Emollient Unguent as this that followeth.

Take Unguent Dialthea, one ounce and half; Bdellium, Mastick, Turpentine, of each half an ounce; the Marrow of the Legs of Veal; Oyl of sweet Almonds, Camomile, the fat of a Hen, of each six drams; the Mucilage of Linseed, and Fenugreek, of each one ounce; Wax as much as will suffice; and make a soft Unguent.

The Callus being sufficiently mollesied, the Member is by the help of two Assistants to be drawn this and that way, and so to be extended: but then let the Chirurgion put again into its place that which sticketh forth in the place where the Fracture is; and if he be not well able to do it otherwise, he may then on that part upon which the bones do most rest and incline lay a Tile wrapt up in Wooll, and so by binding of it he may force it back again unto its former seat, and there accustom it to abide: or else let him altogether break the bone, which may be done in the aforesaid manner; or else if the Chirurgion put the broken Member (in which the Callus is) upon his Knee, and then on both sides press down the bone as hard as he can with both his Hands. And then the Heads of the bones are rightly to be fitted together, and a Convenient Cure instituted for this new Fracture.

But if the Callus be now already old and of long continuance, and that it be waxen very hard, and that the Patient be weak, or aged, the best course will be (as *Albucasis* adviseth) not to lay Hands at all upon it, by reason of the dangerous Symptoms that are wont to follow thereupon, in this kind of Cure. For it is much better, of two evils to choose the less; and to be content rather to live yet longer (though deformed and lame) for many yeers, then by a cruel Cure to attract dangerous and deadly Symptoms. Yet it is a thing impossible, (if the Callus be old and obdurate) to break it; but if any



will needs attempt it, the bone is more likely to be broken in some other place then where the *Callus* is; and so by this means grievous Maladies will ensue unto the sick person; and as for what he desireth, he will be deceived in his hopes; for the deformity and writhedness of the Member will not hereby be corrected, since that the Crooked *Callus* cannot possibly be amended.

**Chap. 6. Of Correcting the Callus that is greater or less then what it ought justly to be.**

**A**nd sometimes also it so happeneth that there is generated a *Callus* less or greater then what it should be. And indeed the *Callus* is generated less then it should justly be, by reason of the scarcity and want of that thick Aliment whereby the bones are nourished, and from which the sayd *Callus* is bred: and this scarcity of the Aliment is either from too spare a Dyet in the Patient, or from the Patients not using of those meats that are most fit for the breeding of the *Callus*; or from the swathes being rowled on too hard and close; or else lastly, because that the Medicaments administred being over astringent have hindered the afflux of the Aliment.

*Signs thereof* | Now the *Callus* when it is less then justly it should be is known by the touch, by which it is discovered to be but small, and the Member is somewhat weak in its motion; and the above mentioned causes went before.

*what to be done, for the breeding of a greater Callus.* | But now that there may be generated a greater *Callus*, we are to allow unto the sick person a full dyet, and meats that breed a thick and viscid Juice; the swathes are likewise to be loosened, and the part to be plyed with warm water untill it appear to be very red. For in this manner there is drawn unto the part affected a greater store of blood, that so there may be supplied a more plentiful matter for the generating of the *Callus*. There are likewise Medicaments to be imposed, & Dropacisms (as they call them) that are moderately heating and attracting a more plentiful Aliment unto the place affected. There is likewise to be administred one dram of the Stone *Osteocolla* with the Water of the greater Comfrey (ground smal upon a Marble) in *Piscen*, flesh broth, or Wine, which hath a singular virtue to generate the *Callus*; as by examples *Guilhelmus Fabricius* proveth in his *First Century*, and *Ninetyeth Observation*.

*The Callus bigger then it justly should be* | But then sometimes (on the contrary) the *Callus* is generated bigger then what justly it should be; which proceedeth from the over-abundant afflux of the Aliment (especially when it is too thick) as also by the giving of the *Osteocolla* Stone hand over head; which although it hath indeed a notable virtue in generating the *Callus*, yet Nevertheless it is more surable and convenient for aged persons, and such as are of riper years, then for such as are very young. For if it be administred unto these, there is then generated a *Callus* greater then what justly it should be, as by an Example *Guilhelmus Fabricius* teacheth us in the place before aledged.

*Signs thereof.* | Now this *Callus* is known by the very touch, by which it is easily discovered; as also by the pain which ariseth from the Compression of the Muscles and the Nervous parts; whereupon the part also is rendered unfit for motion, and especially if the fracture be made neer unto the Joynt.

*The Callus how it is to be made less.* | Now the *Callus* if it be over-great is diminished and made less by discussive and digestive Medicaments; as by frictions of *S<sup>o</sup> Nitre*, and Oyl, and by a persufion and fomentation made of Salt water, or a decoction of the Leaves of Beets, Mallows, Pelitory of the wal, Sage, flowers of Camomile, and of Melilote; or else a Cataplasim made of these is to be layd on.

Or else let the part be anoynted with this Unguent. *Viz.*

Take Goosefat, Bears fat, Mans fat, of each two ounces; Juice of Earth-worms one ounce; Ammoniacum a dram; and mingle them.

But yet if the *Callus* be harder then ordinary, then let Emollients be added unto Digestives; and before the application of Cataplasms let the place affected be fomented with some Decoction. As,

Take Roots of Marshmallows one ounce, Roots of white Lilies and Bryony, of each half an ounce; Flowers of Marshmallows, and Mallows, of each one handful; Camomil and Melilote, of each half a handful; Linseed, and Fenugreek, of each half an ounce; boyl them for a fomentation; and of the mass make a Cataplasim.

But let these fomentations be used, not only until the part wax red, and begin to swell; but that also the part may again fall, and become lank and wrinkled.

Let this Dyet be very sparing; neither let him eat much food that yieldeth a thick and clammy Juice.

*Guilhelmus*

*Guilhelmus Fabricius* (in his 1 Century, and *Observat.* 21.) maketh uſe of theſe Medicaments, for one whoſe *Callus* was grown too great, by the uſe of the *Stone Osteocolle*. Firſt of all he twice a day fomented the *Callus* with the following Emollient Decoction.

Take the Roots and Leaves of *Marſh-Mallows*, *Bryony*, *white Lillies*, *Bears Breech*, *Flowers of Camomile* and *Melilote*, of each one handſul; *Common Worm-wood*, and *Red Roſes*, of each one ounce; boyl them in *Vinegar* one part, and *Water* four parts; unto the Conſumption of the third part.

After this he anointed the *Callus* with the following Unguent,

Take *Mans fat*, *Bears fat*, and *Goose fat*, of each two ounces; the *Juyce* of *Earth-worms*, and *Vinegar* of *Squils*, of each one ounce; Mingle and make an Unguent.

After the Inunction he applied the following Emplaſter ſpread upon *Leather*.

Take the Emplaſter of *Frogs* with *Mercury*, and of the *Mucilage*, of each one ounce; and mingle them.

In this manner he proceeded for ſix daies, until he ſaw that the *Callus* was not only much mollified, but alſo moſt manifeſtly diminiſhed. And afterwards inſtead of the Plaſter he fitted unto it a *Leaden Plate*, and with a *Swathe* he bound it faſt and firmly upon the *Callus*. And by the uſe of the Remedies, and the bleſſing of *God* upon them, the *Callus* was ſoftened, Reſolved, Extenuated, and Depreſſed; and the ſick perſon reſtored again unto his former health.

### Chap. 7. Of the Slenderneſſ and Weakneſſ of the Member.

And furthermore it happeneth oftentimes, that after a *Fraſture* the Member remaineth ſlender and weak: which is cauſed either through the ſcarcity of the Aliment, whiles that by the long and various bindings of the *Swathes* the *Veins* carrying the Aliment unto the part are ſtreightened, and wel-nigh cloſed up; or elſe when the ſick perſon hath not food enough allowed him to Eat and Drink: and that likewiſe which maketh very much hereunto is a long continued reſt of the Member, and its Ceſſation from Motion.

And therefore we muſt by all means endeavour, that a more plentiful Aliment may be attracted unto the part. And therefore as much as is fit the Member is to be moved, and reduced unto its wonted and accuſtomed motions; and to be fomented with Decoctions that only attract the Aliment unto the

part affected, and do not any waies ſcatter it. And Dropaciſms are here likewiſe of ſingular uſe. Or,

Take *Oyl of Coſtus* and of *Camomile*, of each half an ounce; *Oyl of Caſtor*, and the *Martiat Unguent*, and *Mans fat*, of each one ounce; and mingle them.

For broken bones that grow not together as formerly.

And ſometimes alſo it happeneth (eſpecially in aged perſons) that the broken bones will not be brought to grow together again; of which thing *Guilhelm. Fabricius* (in his 1 Cent. *Observat.* 92.) hath a Hiſtory. The very like whereunto there happened here of late, in a very learned man, who is yet living. This man was in the very ſame caſe with the other mentioned and deſcribed by *Guilhelm. Fabricius*. For he can indeed write with his right Hand; but if at any time he deſire to liſt up his whole right Arm (which he had broken) either forward or backward, he then needeth the aſſiſtance and ſupport of his left Hand.

Now this cometh to paſs, if the bones (after they be ſet,) be not kept in their places ſteady and unmoved; and this likewiſe was the cauſe of what happened unto that learned perſon we but even now mentioned. For he being very *Fleſhy* and *Corpulent*, and his Shoulder that he had broken being not poſſibly to be bound up in a right manner, and hard enough, and he in the night time ſleeping very unquietly, and continually turning himſelf in his bed; and moreover, by reaſon of his extraordinary ſweating in his Shoulder, the Medicaments applied thereto being continually kept ſo wet and moiſt that they could not ſtick cloſe enough to put forth their virtue, the bones could not be conſolidated, nor brought to grow faſt and firm together, but they lay at a certain diſtance one from the other.

But now ſuch *Fraſtures* as theſe are afterward very hardly to be cured, (unleſs it be ſo that they are new and of no long ſtanding, in which the uſual way of Curing is to be adminiſtered, and the *Osteocolle Stone* to be given the Patient, as we have already ſhewn you how, and in what manner; of which very thing we finde an example in *Guilhelmus Fabricius* his third Cent. *Observat.* 90.) in regard that a *Callus* is drawn over the extremities of the broken bones, by reaſon of which the bones can no more be brought to grow together. Yet ſome there are that think that ſuch inveterate *Fraſtures* as theſe may likewiſe be Cured. And *Cornelius Celſus* (in his 8. B. and 10. Chapt.) writeth of them, in theſe very words. If (ſaith he) the *Fraſture* (to wit, of the bones that grow not well together) be inveterate, the Member is then to be extended,

tended, that it may be something hurt. The bones are with the Hand to be divided one from the other, that by coming together again they may be exasperated; so that if there be any thing fat, it may by this means be taken away, and that it may wholly become new as it were: and yet great care ought here to be had that the Nerves and Muscles be not hurt. And then the Member is to be fomented with Wine in which Pomegranate Rinds have been boyled; and the same is likewise to be laid on mingled with the white of an Egge. The third day it is to be loosened, and fomented with Water in which Verwein hath been boyled. On the fifth day the like is to be done; and Splinters are to be placed round about it. And as for all the rest that is to be done (both before and after) it is the very same that we wrote before. But this way of Curing is very dangerous, and (which Celsus himself likewise feareth) by thus doing the Nerves and Muscles may easily be hurt; and thereupon an Inflammation or Convulsion excited.

### Chap. 8. Of the Fracture of the Arm.

And thus much (in general) may suffice to have been spoken touching Fractures. But now because that the bones which are broken are various, and in regard that according to the variety of the broken bones the Cure doth something differ, we shall now therefore speak something of Fractures in their species, and particularly. But as for the rest of the differences, in regard that they make very little or nothing at all either for the knowledg or Cure; and that all that may be said of them is contained in those things which we have hitherto spoken of Fractures in general; we shall therefore pass them over, and shall treat only of those differences that are taken from the subject, and the diversity of those broken bones. And because that very frequently the Arm, Shoulder, Leg, and Thigh, are broken, we shall therefore in the first place speak of them; and afterwards we intend to treat likewise of the Fractures of the rest of the bones.

And indeed as touching the Fracture of the Arm, in regard that the Arm together with the Hand is the Organ or Instrument of laying hold on things, and of many labors, and is likewise exposed unto external injuries, it is wont to be often broken.

Now the Arm, or that part which is from the Shoulder to the Wrist, consisteth of two

bones; of which the greater that lieth lowermost is called *Cubitus* or *Ulna*; but the less which lieth above the Elbow is termed *Radius*. Now sometimes both these bones are broken, and sometimes but only one of them.

### Prognosticks.

1. The Fracture of the Arm is more easily Cured when but only one of the bones is broken, then when they are both broken; as we told you above, in the first Chapt. and sixth Prognost.

2. If only one of these Arm-bones be broken, the Cure is more easie; if the upper bone, (or *Radius*) then if the lower bone (or *Cubitus*) be broken; for the upper needeth less extension then the lower: and if the lower, (to wit, the *Cubitus*) be preserved sound, it serveth instead of a Basis and prop as it were, to keep the broken bone from being moved out of its place. And Secondly, Because that it is more easie to be set in its place again; unless it be in that part next the Hand. And thirdly, Because that the Elbow bone being kept safe and sound, it is carried more safely in the Scarf or Linen Swathe.

3. But the worst Fracture of all is, if both the bones be broken together. For first of all, they have no prop, nor any thing at all to sustain them. And then again Secondly, They need a greater Extension; since that the Nerves and Muscles are more contracted toward the place from whence they spring; in regard that there is nothing whereby (when they are extended) they may be so kept. And Thirdly, because that the neer neighbouring parts are more hurt.

4. But now the bones of the Arm are for the most part made to grow together within thirty daies; although (as we said before) there may be great difference in the Age, and Nature of the Patients.

### The Cure.

Whatsoever things they are that are required unto the Curing of the Fractures of the other parts, they are here likewise necessary. But as for the Extension, there is less need of strength and force when the *Radius* is broken, then when the *Cubitus* or Elbow is broken: but the greatest need of all, when both the bones are broken. And indeed, if both the bones are broken, the Extension that is made ought to be equal; but if only one of the two bones be broken, the greatest and strongest Extension ought to be in that part where the bone is broken. The Extension being made, the broken bone is again to be directed into its proper place, and there

set



set fast. The broken bone being thus replaced, the Fracture (as we told you before) is in a convenient manner to be bound up and rowled about with Swathes; and all other things are here to be performed that were before spoken of in the Cure of a Fracture in general; and then at length the Arm is to be fitly placed and Scituated. And indeed (as *Hippocrates* adviseth in his *first B. of Fractures*, Text 22.) in the placing thereof there is great care to be had, that the Hand be not lower then the Elbow; lest that if the Arm hang down the Blood should flow toward the Fracture; but somthing (and not much) higher then the Elbow; and yet nevertheless so that no pain at al may be caused. And the Arm is also to be placed in that Figure, which may not in the least pervert any of the Muscles, and breed pain. And therefore the Arm is neither to be wholly extended, neither ought it to be wholly doubled and bowed together: neither is it likewise to be placed in a Supine or Prone manner. For these are the four extreme habits; and extension is contrary unto bending and crooking; and so is Supine also contrary unto Prone. But now, there are also two other manners; one that betwixt extreme bending and extension (called *Angularis* by *Hippocrates*) the other between prone and supine. And alwaies, if the Arm be rightly placed, the Muscles that arise in the fore part of the Elbow will be wholly Scituated from the interior part; and those that are from the exterior part will likewise be contained in this; and so there will not be at all any extension or perversion of the Muscles. And indeed, the Arm being thus bound up and Scituated, it will be very fit that the sick person keep himself in his bed for ten daies. But after this, in regard that the sick person will not be willing any longer to keep his bed, but will now desire to walk about; from the Neck the Arm is to be hung in a broad and soft Garter or Scarf, equally sustaining within it good part of the Arm, with part of the Palm of the Hand, so, that none of the bones that are set and joyned together may by any means be moved out of their places.

### Chap. 9 Of the Fracture of the Shoulder.

#### Prognosticks.

The Shoulder bone grows together in fourty daies: for it being somewhat a great bone requireth the longer time for the generating of the *Callus*.

#### The Cure.

And therefore the first care (as in all Fractures) ought to be, that the broken bones may be restored unto their own places; and being Joyned together, that they may be so preserved. That this may be the better performed, there will first of all be need of Extension; which how it ought to be done in this Case, *Hippocrates* hath accurately described in his *2 B. of Fractures*, and *Offic. Medic.* The Sum of all is this; that the sick person either sitting or lying along be kept so steady and immoveable, that he may not be stirred so as to give ground in the Extension of the part: and let the Shoulder be kept in about the upper part of it, and the broken bone drawn this and that way. Now if this cannot be done (in those that are of full and ripe age) by the help of the Hands alone (by reason of the thickness and strength of the Muscles in that place) then there will be need of Engines and Cords; of which *Hippocrates* (in the *place alleadged*) maketh mention. The Extension being performed, the bones are conveniently to be set and placed together; which may here be done without any difficulty. Unto the broken bones set right and straight fit Medicaments (touching which we have spoken before, in the first Chapr.) are to be laid on; and afterward Swathes are to be cast about it, beginning from the Fracture it self: and here we are to be very heedful, that the Member be evermore bound up in that Figure in which it ought to remain; that is, that the Elbow with the Shoulder may make a right Angle, lest that in changing the Scituation the Swathe press too close in one part, & be overloose in another, and so the bones be perverted. *Hippocrates* bindeth on the Splinters the seventh or the ninth day, because that in the Shoulder by reason of the greatness of the Muscles (by which it is contained) those bones that are about the Fracture in a longer time becomie altogether slender and loose: for then at the length we come most fitly unto the applying of the Splinters. But we must have a care, that these Splinters touch not the extremities of the Joynts; and therefore (as *Celsus* in his *8. B.* and *10. Chap.* telleth us) they ought on the outside to be very long, somewhat shorter from the brawn of the Arms, but shortest of all under the wing of the Shoulder. But if the Splinters be instantly fastened on at the very first of all (according to the practise of some, and indeed most of the Modern Artists) they ought then to be tied on but loosely; but then after the seventh and ninth day they are afterward to be loosened, and bound on somthing harder. And then in the

the last place the Member is rightly to be placed; and that the Shoulder may not be perverted and turned awry, let the broad Swathe that encompasseth the Shoulder be drawn in a round manner about the Breast; and when the Shoulder ought to rest, let the first many times wrapped about be cast and drawn under betwixt the side and the Elbow, lest that the Shoulder touch upon the side; but yet let there be a space in the middle, whither when the Shoulder is forced by the Reins drawing it into the breast, it may not at all be depraved and disordered. Let the sick person lie upon his back, putting his hand upon his Stomack; and let soft pillows be put under the Shoulder, that so it may not remain hung up as it were; but the Elbow is to be lifted up by a Scarf put about the Neck, that so the Angular Figure may be preserved, and that it may not be moved whilest the Patient sleepeth.

### Chap. 10 Of the Fracture of the Leg.

**T**He Leg is that part that is extended from the Knee unto the Foot. Now it consisteth of two bones: of which that which is the thicker, and is Scituated in the inward part of the Leg we call *Tibia* or the Shin-bone; but the thinner and outward bone is termed *Fibula*. Now these bones are broken, sometimes both of them together, and sometimes but only one of them; and the Fracture happeneth either in the midst, or in the upper, or in the nether part.

#### Signs Diagnostick.

If both the bones be broken, this is most easily known; because that the whole Leg may then be bowed and bended. And it is likewise no hard matter to know the Fracture of the shinbone, if it be wholly broken; because that this whole bone cometh easily to be seen as being in a place where there is but little or no flesh. But if the *Fibula* only be broken, this is not so easily known, because that it is covered with much flesh; and yet nevertheless the broken part inclineth inwardly.

#### Prognosticks.

1. If only one of the bones be broken, the Cure is then easier then if they be both broken.

2. If the *Fibula* only be broken, it is more easily Cured; and the sick person will be sooner able to set his Foot to the ground, in regard that the Legs are easily extended; and because that the Shin-bone sustaineth the

greatest part of the weight of the Body.

3. If the Shin-bone be broken, it is very hardly Cured; because that there is here need of a greater Extension; and the sick person is much longer ere he dare adventure to walk.

4. But now these bones for the most part are consolidated within fourty daies, and very seldom sooner.

#### The Cure.

And therefore, whether only one, or both the bones be broken, the Leg is (as much as may be) to be extended; that so the bones without any damage at all may again be restored unto their own places, and there joyned together. Which most commonly is to be done by two strong able men; who are to draw the Leg toward them, they standing on both sides of the same; one into the superior part; and the other into the inferior part. And it will be but a Vain-glorious act in them to make use of any kind of Engines, when the Case doth not require it. But if they cannot accomplish it otherwise, let them then make use of the Reins and Engines that we so often have described, and which are so generally well known. And when the Leg shall be sufficiently extended, the broken bones are then to be setled in their places. And afterward convenient Medicaments are to be imposed; and the Leg is then to be rowled and wrapt about with Swathes, (as in general we have already told you;) which ought to be both broader and longer then in the Arm: and the Leg is so altogether to be Scituated and composed, that it may not be turned awry unto any part; and that the broken bones may not be disordered when he goeth to his bed, or to ease Nature. Touching the Scituation of the Shank or Shin-bone, see likewise further hereof in *Guilhelm. Fabricius* his 1. *Centur. Observat.* 93. And at length the Leg when it is extended and stretched forth straight, is to be placed upon a Cushion, or some other soft and plain thing, and so the Splinters and Pipes are then to be administered as in general we told you before, in the *first Chapter*; in which thing we are to observe, that they be not applied upon the extremities of the bones sticking out; or upon that Tendon which tendeth and passeth along from the Leg unto the Foot, and is there knit unto the Heel. For these parts having in them a very exquisite sense will not endure compression; but if they be pressed together they are then pained and inflamed.

And there is here also sometimes need of blood-letting, and purging, as in the Fracture of the Arm.

As for matter of Dyer, we ought altogether more and longer to extenuate the body of the Patient (as Hippocrates commandeth) when the Legg, then when the Arm is broken; by how much that is greater and thicker then this; and because there is also a Necessity that the body should rest, and lye still.

## Chap. II, Of the Fracture of the Thigh.

**T**He Thigh bone of all the bones in the body of man is absolutely the biggest, thickest, and longest; and this may also chance to be broken, either in the midst, or in the Extremities thereof, and the places neer adjoining.

### Prognosticks,

1. Touching the Fracture of the Thigh Celsus in his eighth Book and Chap. 10. writeth thus: If the Thigh be broken, it must of necessity be made shorter; because that it never more returneth into its old place. But yet notwithstanding there is much more weakness in the Thigh, where the Negligence of fortune is likewise added unto the fracture. Which opinion

whether the  
Fracture of  
the Thigh do  
necessarily  
cause lameness.

of Celsus is (according to Pectus in his fourth Book, Chap. 24.) thus to be understood by us not that by no means the broken bones may be restored unto their wonted seat in the Thigh, and there be wel fitted together, that therefore the Thigh bone must necessarily be shorter; but when the part is less distended then need requireth, and when the bones are not wel and most exactly set and fitted together: since that we see from day to day Many who have suffered a Fracture of the Thigh (it having been wel fastned together with Iron instruments) have yet walked straight & upright without any lameness at al. And the very same we are taught by Avicen, Book 4. sen. 5. tract. 3. Chap. 14. by Guido de Cauliac. in his 5 tract. Doct. 1. Chap. 7. by John de vigo, in his sixth Book and 14. Chap. by Andreas, in his second B. of Chirurgery, and 14. Chap. and divers others. But Guilhelm. Fabricius (in his 5. Cent. and 86. Observation) writeth that he never saw nor knew any that after this kind of Fracture escaped without a lameness, besides one young Mayd only, unto whom he administred a new and peculiar kind of Cure. And this especially happeneth if the Thigh be broken nigh unto the Hip. And of this kind of Fracture the Authors alleadged are to be understood: But if the Thigh bone be broken toward the knee

or in the midst, & that there be diligence used & care taken in the curing thereof, the fracture may then be healed without any great difficulty, or lameness. But that if the sayd thigh bone be broken toward the Hip, lameness for the most part followeth, these are the causes, as Guilhelmus Fabricius reckoneth them up. The first is this, because that the Thigh bone is not straight, as the shin and Arm bones are, but that it is naturally dilated into the external part, as it were into a bow: wherefore if it shal chance at any time to be broken it is easily bowed and bended toward the inward part: but then toward the external part it buncheth forth as it were into a bow. Secondly, there are present the greatest and strongest Nerves and Muscles from the inward part of the Thigh, which so soon as the bone is broken they drawing, the said bone (which as we have said was now before naturally bowed) toward their original, (to wit, the place where they have their first beginning) do easily and in such a manner indeed draw it into a bow, that the extremities thereof about the Fracture do disjoyn themselves, and stick forth toward the external part. Thirdly, because that it is but one only bone, wherefore it is not so easily to be detained in its own place, as if it had some other bone adjoyned with it, as the shin and the Arms have. Fourthly, because that the part is very fleshy, and the bone situated as it were in the midst of a pillow, experience teacheth us that it can very hardly be kept in its own proper place by the benefit of the splinters, and the Splenia Coverings; and especially if the Fracture be made obliquely. For those very strong Nerves and Muscles do again (notwithstanding that they were from the very first rightly set and replaced) draw the bones out of their proper places. But yet nevertheless, if any one wil follow that Method propounded by Guilhelm. Fabricius himself, he writeth that it may very easily be avoided, that the Leg shal not at al become shorter, or that any lameness follow thereupon.

2. The Thigh will at length in fifty days be brought to grow together again, and to be Consolidated, and not sooner; in regard that (as I sayd before) it is the greatest of all the bones, and therefore requireth the longer time, that the Callus may be generated, by which it is brought to grow together.

### The Cure.

The Thigh bone being broken, if the bones be removed out of their places, there will then be need of a very strong



strong and forcible extension; since that the Muscles that encompass about the Thigh are the greatest of all the rest, so that these strong Muscles (when they are contracted toward the place of their original) may easily overcome and master those bonds by which the Extension is made: which if it should so be, the Leg is thereby rendered shorter; which is altogether a great deformity, and very much inconvenient. For although the Arm be somewhat shorter, yet it may be concealed, neither will there be any great hurt thereby; but the Thigh if it be made shorter it unavoidably causeth a lameness, and unseemly halting.

There being made a sufficient extension, the Muscles (being of all other the strongest) do easily draw up the lower part of the broken bone unto the upper parts. But now nevertheless that this may the more rightly and decently be done, (a sufficient extension being made by the parts of the Palms sticking forth, as in all other Fractures) let the bone be set directly straight, and so pressed close together. And afterward, let a Necessary and fit Medicament be imposed thereon, and the Fracture conveniently be bound up: and here it will not be amiss to cut in pieces some linen Clothes, and to wrap them round about upon the Hip, and neer the *Iliac* Guts, as likewise the Groins, and that which is betwixt the Arse and the Genitals; as for other Causes, so likewise more especially for this, to wit, that the external Splinters offend not the naked part.

*The Pipe of what kind is must be.*

The Pipe that is fitted unto the Thigh ought either to take in the whole Thigh, or else not at all by any means to be administered. For if the Pipe that is fitted thereto be any whit shorter than that it reach even unto the Ham, and beyond it, it will bring more hurt then help thereunto: for it cannot be prevented, but that upon the motion of the body, or the Legg, the Thigh also must be moved. The Pipe will also be very troublesome unto the Ham, and it will suffer the Knee to be bowed. And therefore if any bend the Knee, there is a Necessity that the Thigh bands be likewise therewithal moved, and the Muscles figured in this and that manner, and the broken bones moved out of their places. And therefore it seemeth to be the most expedient course, that the Thigh be all of it conveyed into the sayd *Canalis* or Pipe, which is to reach from the Hip even almost as low as the Foot. But now this Pipe is at a sitting distance to be bound on with many bands both unto the Thigh and Legg; and on both sides woollen Clothes are to be applied, that so the Member may not

decline unto either part; and this is altogether to be done, that so the whole foot, (to wit, the Thigh with the Legg and foot) may lye along softly and without pain; but yet so firmly, that the sick person may not either through impatience, or whilst he sleepeth, move the same.

For it is to be observed, (as well in the Fracture of the Thigh as of the Legg) that the bottom of the heel be kept in as much as may be, and rightly placed: for if the foot hang down, and the rest of the Legg be supported and propped up, there is a Necessity then that the bones should be seen to stick out in the fore-part of the foot: but if the Heel be placed higher then what is just & fitting (the rest of the Body being gently lifted up,) the bone in the fore part of the Legg will necessarily shew itself more flat then what is just and meet; and this so much the more, if the Mans heel be naturally greater then ordinary.

And this is likewise (in the Fracture of the Thigh and Legg) to be taken notice of, that if by reason of the swathes, or the binding on too hard of the splinters, or else from any other cause, there arise in the Ham, or the parts beneath it, a swelling greater then what might justly be expected; then that which is too streight and close, & presseth the part too much, is to be loosened; but the swollen part is to be fomented or anoynted with those things that have in them a virtue of asswaging pain, as also of digesting and gently driving back the humor; such as the moist and oily wool, thoroughly wet in wine and oyl; or the like Medicaments.

But yet Nevertheless, (as already hath been sayd) in regard that although this cure should in this manner be accomplished, lameness and halting doth for the most part follow thereupon; therefore *Guilhelm. Fabricius* (in the place alleadged) propoundeth a new and artificial way and Method of Curing the Fractures of the Thigh, declaring it by an example; and withal he writeth that he had reduced the way of curing the Fracture of the Thigh (which hath alwaies hitherto been accounted most difficult) unto that facility, that even any Novice or young Practitioner may without any hesitation or doubting cure such a like Fracture, if he will but use a little diligence, and be but provided of fit Instruments. But now as for that way and Method of Curing (together with the Instruments described and delineated to the life, we refer you for a sight of them unto the place alleadged.

## Chap. 12. Of the Fracture of the Nose.

**A**ND these bones, to wit, of the Leggs, Thigh, Arm, and shoulder, are those that are more frequently broken then any other. But yet nevertheless it so happeneth sometimes, that other bones may also be broken; touching all which we shall now proceed (in our progress) orderly to treat of them all, even from the Head unto the foot.

*The Fracture of the Nose*

And first of all, as touching the Fracture of the Nose; this may happen many ways, as Hippocrates teacheth us, in his Second Book of the Joynts, and 37. Text. For either a part of it may be broken off, and yet notwithstanding the Nose it self is still kept, that it neither hang downward, neither be turned and made to stand awry, or that either of these should happen; and this either in that part that is Griftly, and sticketh forth; or else in the rest of it which is kept and held together with bones. And sometimes also even in the very midst of the Nose (where it is sharp) the flesh neer unto the bone is bruised and battered; or the bone is likewise somewhat hurt, but yet not much: and now and then also a wound happeneth unto the Fracture.

## Prognosticks.

1. The Nose of all the parts of the body is most easily set together again: and if it be not forthwith set right and straight, it will not at all be set right and straight, but that it will stand awry.

2. In the Nosethrills a *Callus* is soon bred, and increased; for the Nose (unless it be corrupted) is in ten days healed, as Hippocrates tells us in his second Book of the Joynts. But others notwithstanding there are that say it is not to be done in less then eighteen days; and others assert, that it is not done in less then twenty dayes time: which difference happeneth according to the several constitutions of bodyes. For Nature differeth from Nature.

## The Cure.

If therefore the broken Nose be equally beaten down unto the inferior part, and be rendered flat; then something is to be put into the Nosethrills that may set it up straight again, as the Probe or searching instrument, or the instrument they call *Spatha*: or else that which is broken is to be lifted up with the finger thrust up into the Nosethrills, and so to be restored unto its Natural situation,

and place. And outwardly likewise we ought on both sides to lay hold on the Nose, and to draw it upward.

But then, that the bones of the Nosethrills (that are again brought unto their wonted form and figure) may be preserved in their Natural seat, either Liniments folded together, or the shavings of Linen (commonly called Lint) or else some such like thing wrapt up in the Linen, or Leather, or a leaden or silver pipe covered over with a soft skin, are to be put up into the Nosethrills. But if the nose be broken only in one side of it we ought then also to set it right & straight (in a Convenient manner) from that part which declineth, and so to restore it unto its natural seat; both by thrusting in the finger, or some fit Instrument, into the Nosethrills (in that place where the Nose is hurt; as also by setting the Nose straight outwardly. But then, lest that bone which is composed and set together again in its due place should again be depraved, and fall down; there are to be thrust up into the Nosethrill that is hurt either Linen raggs, or a great Goosequill anoynted with a Gum, and covered over with a soft skin, or a pipe or plummet of Lead, or little staff of silver, wrapped up in a soft Skin. Neither is it much material what it is we thrust up into the Nosethrills; only that it be something that may keep the broken bone of the Nose from falling down; and that it be somewhat that is soft, and free from an offensive smell. Neither are Spunges also (or the like things) to be put up into the Nosethrills, in regard that by soaking in the Moisture of the Nose they become thick, and are dilated; and so being dilated they distend the part, and again move out of their places the bones after they have been wel set together. That which is put up ought to be anoynted with some emplastick Medicament, of *Mannathuris* or the *fine flour of Frankincense*, *Gum Tragacanth*, *Mastic* and *oyl of Roses*.

But if the Nose be broken, and writhed in an oblique manner neer unto the Gristle, then we must agglutinate unto the Nose (in that part into which it inclineth) a little loop or fillet (of a fingers bredth) with that kind of Glew which we mentioned before, touching the dry suture or stretching in Wounds, and afterward it is to be stretched forth, as much as shall be thought fit, that so the Nose may be set straight again. But let this fillet be so long, that it may afterward being drawn below the Ear be drawn likewise about the Head: and as for the two ends thereof, we may agglutinate them unto the forehead. For this Rein will justly set straight the Nose, and it may be either streyned or slack-

ned, according as we find occasion. And if the Tents that are put up into the Nofethrills do stir up and caule any pain, they are to be taken from thence; and all this while the Nofethrills are to be kept straight with the Reins aforefaid. But after the fourteenth day the Reins are to be removed, and a Cerot to be laid on, and care taken that the *Callus* do not grow forth more then what is juſt and fit.

If the bones of the Noſe ſhall be broken and ſhattered into ſmal pieces; we are then (as much as may be) to put them all, and each particular of them, back into its proper ſeat; or elſe they are to be driven back by Inſtruments ſit for that purpoſe; neither muſt we eaſily admic of the taking forth of any bone, and nor at all, if it may by any means be agglutinated, in regard that it breedeth deformity. And afterward ſome Cerot or ſome other Medicament is to be impoſed, for the confirming and ſtrengthening of the bones.

If a Wound ſhal happen with the Fracture, then ſome Emplaſter that is ſit and convenient in bloody Wounds is to be laid on: and ſuch like Wounds are moſt eaſily Cured of any.

If any Ulcer begin to breed within the Nofethrills; then tents anoynted with ſit and proper Medicaments are to be put up into them; and by all means care muſt be taken that there grow forth no fleſh within the Nofethrills. For which end likewiſe very uſeful is the Leaden Pipe put up.

*The binding up of Fractures.* Touching the binding up of theſe Fractures Authors differ much; and of theſe, ſome of them allow of theſe bindings up, but others altogether diſapprove of them. And indeed it ſeemeth altogether more ſafe wholly to omit theſe bindings up, and the Swathes; ſeeing that either they perform nothing at all, if they be looſe; or if they be harder and cloſer drawn together, they then ſet the Noſe awry, and make it flat; and very eaſily may the broken bones of the Noſe be kept faſt in their places by convenient Emplaſters, without any binding up at all. And in no other caſe doth this binding ſeem convenient, but only in this, if in the middle of the Noſe (where it is ſharp) the fleſh be bruised about the bone, and the bone ſtick forth; that ſo the Noſe being preſſed together in that part may acquire its own Natural Figure again. But here alſo, as for binding, although it ſeem altogether neceſſary, and very profitable: yet nevertheleſs we deny it to be at all neceſſary, ſince that a Cerot or an Emplaſter may ſuffice. And if at all it be requiſite to apply the

Swathe, it is to be caſt upon the middle of the Noſe, and both the ends thereof are to be tied together at the hinder part of the Head.

*Ambroſe Parry ſeth this:*

Take *Frankincenſe*, *Mallick*, *Bole-Armoriack*, and *Dragons blood*, of each half an ounce; *Roch Alum*, and *Roſin of the Pine*, of each two drams. Let them be very finely powdered, and then incorporated with the white of an Egg. See more hereof in *Hippocrates* his 2. B. of the *Joynts*, from the 36. to the 46. Text.

### Chap 13. Of the Fracture of the Jaw Bone.

And ſometimes alſo the lower Jaw is broken; and this is very eaſily to be known.

#### Prognosticks.

1. If the bones of the Jaw have not an Inflammation happening unto them, even from the very beginning, they are then conſolidated within twenty daies, and the Teeth remain entire and ſafe.

2. But if the Cure be long delaied, the Teeth may be viciated, and rendered unuſeful.

#### The Cure.

If the Jaw Bone be ſo broken tranſverſly, that yet notwithstanding the bones ſtick together one to the other in any part, we ought with the Fingers on both ſides (to wit, as well thoſe that are put up into the Mouth, as thoſe that are outwardly applied) to preſs the bone together, and ſo to force it into its own ſeat again. But that the Jaw Bone is again reſtored into its own place, appeareth by the equality and evenneſs of it, and of the Teeth.

But if the whole Jaw bone be broken in a tranſverſe manner (which nevertheleſs very ſeldom happeneth) and ſo that indeed bone ſtick out upon bone, and that one Tooth ſtand out upon the next Tooth unto it, then by putting the Fingers into the Mouth, and likewiſe by applying the Hand externally, the broken bones are to be ſet in their places again: and unleſs it may be done by a ſingle & ſimple compreſſion, there ought firſt of all an extenſion to be made (the Phyſician extending it before, and ſome aſſiſtant that helpeth him keeping of it back) and afterward the bones ought to be ſet and Joynd together. It is a ſign that the Jaw bone is rightly ſet and replaced, if we ſee that the Teeth are again



again restored and disposed of unto their former Natural Situation.

The Teeth which have been moved and loosened in their holes are with a Thread of Gold, Silver, or Iron, to be Joyned and fastened unto those that stand next them; until they shall again become firm and stable in their places.

These things being thus performed, some Medicament that is fit and proper for the Fracture is outwardly to be applied unto the Jaw bone, that so the broken bones being now set together again may be firmly fastened in their seats; and externally we are to apply a Splinter of Leather or some other convenient matter, answering in length unto the Jaw bone. And after this a fit convenient binding is to be instituted; which is done with a Swathe slit at both ends, two Fingers broad, and in the middle part of it cut also long waies, that it may on both sides take in, and contain the Chin. And therefore there being four Heads of the Swathe thus slit at both ends, the two lower of them are to be brought and drawn along unto the top of the Head, and there to be tied together or sewed unto the sick persons night Cap; but the two uppermost are transversely to be drawn unto the lowest part of the Head behind; or else to be sewed likewise unto the same night Cap.

Let not the sick person lie upon the broken Jaw-bone; but upon that Jaw-bone that is sound and unbroken; and yet nevertheless let him not rest himself thereon, but rather upon his Head, lest that the Jaw-bone that is set in its place be again distorted and made to stand awry. Let the Jaw likewise be kept immoveable; and therefore let not the Patient speak much, neither chew hard Meats, but let him be nourished with Food that is soft and moist, until the *Callus* be hardened. If any thing shall be observed to be again removed out of its place, on the third day the binding is to be loosened; and if any thing be fallen out, it is again to be replaced.

#### Chap. 14. Of the Fracture of the Channel bone, or the Bone of the Throat.

**H**ippocrates (in his *B. of the Joynts*, Text 62.) reckoneth up six Differences of the Fracture of the Channel bone. For either this bone is broken in a transverse manner, or else long waies. If transversely, this happeneth either neer unto the Joynt of the Shoulder; or else it is broken more toward the breast bone; and furthermore, the

Throat bone is either so broken, that that part which is from the breast is carried upward; but that part which is from the top of the broad bone of the Shoulder is carried downward; and this very often (and for the most part) happeneth: or else on the contrary, that part nigh unto the Shoulder blade is carried upwards; but that which is neer unto the Breast is carried downward; and this very rarely happeneth.

#### Signs Diagnostick.

Now this Fracture of the Channel bone is known rather by the touch, then by the sight; as also by the pain.

#### Prognosticks.

1. If the Channel bone be broken transversely, it is the more easily Cured; if long waies, it is the harder to be Cured. For that which is transversely broken may easily (by extension, and the compression of the Fingers) be brought to return unto its Natural seat; but the other Fracture (that is in the length of the bone) hath evermore something that sticketh out, which can very hardly be fitted together. And then again, because that the Throat bone cannot be so wrapped round about with the Swathe, that what is cleft and broken in the length of the Bone may be again compelled into its own seat; but on the contrary, that which is broken transversely is more easily by the Ligature to be forced back into its own seat again.

2. The Fracture of the Throat doth indeed nothing at all hurt the Commissure of the Shoulder, or any other part; and yet nevertheless because that (although the utmost diligence shall be used) the Neck and the Throat cannot (as the Arms and the Legs) be closely wrapped about with the Swathe, the *Callus* therefore leaveth a very great deformity; because that in a thin bone the *Callus* doth easily become greater: but it is only in the beginning that it seemeth deformed, while it is yet new; but in process of time, when we are once accustomed thereunto, the deformity seemeth the less.

3. But the Throat-bone doth easily grow together again, like as do other thin bones; and indeed in twenty daies at the very utmost it is Ferruminated.

#### The Cure.

But now that this Fracture may be Cured, there are necessarily required two able assistants, for the extension of this Fracture; of which, let the one with both Hands draw back unto the hinder part the Shoulder that lieth neer unto the broken Channel bone;

and let the other quite contrary draw rather toward him the opposite Shoulder, or the opposite part of the Neck; that so the extension may be made. Which so soon as it is done, let the Chirurgion with his Fingers restore the broken bones unto their places again, by pressing together with his Fingers that which sticketh up too high, and by lifting up that which is pressed down; or by restoring it back again into its Natural seat, in any manner whatsoever that shall be thought needful. Some there are, who to Facilitate the restitution of the bone, do put something that is round under the Arm-pit of the sick person, that it may fill up the Cavity thereof; and then withal they greatly press the Elbow unto the Ribs; and so by this means they again restore the bone unto its own place. But if the extremities of the broken bone be so depressed that they cannot in this manner be brought back again upward, then the sick person is again to be laid flat upon his Back upon a hard Pillow or Cushion put under his back-bone between the Shoulder-blades; but the Shoulders are by the strength of the Hands lying upon them so to be pressed down, that the extremities of the broken bone that are depressed may be lifted up so high, that they may again be restored unto their own Natural Situation.

But if the Channel bone be broken and shattered into many small pieces, and that some fragment thereof cause a pricking in the flesh, and difficulty of breathing; then there is an incision to be made in that part of the flesh, and the fragments to be taken forth; or the sharp prick is to be cut and shaved off; and the bones when they are made plain must be joyned together; the Lips of the Wound are likewise to be drawn close together, and some Medicament proper for the Fracture (and which may withall resist and hinder Inflammation) is to be laid on. But if there be found to be many fragments of the bone, (the Skin remaining entire and sound) that yet are not sharp, neither do at all prick, then a Splinter is to be provided of Leather, or some other convenient matter, and being anoynted with a fit Medicament it is to be applied unto those fragments.

The broken Channel bones being rightly set together, some Medicament fit and proper for the Fracture (such as are above propounded in the first Chapter) is to be imposed. After this three Coverings of a convenient thickness and length (so that they may fill up the Cavity or hollownest both above and beneath the Channel bone) are to be provided; of the which two of them are to be put upon

the sides; but the third that is thicker is to be imposed upon the Fracture sticking forth. For so by this means both the broken bone that sticketh out will be depressed, and the broken bones so kept in, that they shall not be moved either upward or downward; neither shall these broken bones (being once set together) be removed out of their proper places unto the sides. And after this a right binding up is to be instituted, which may be done with a Swathe as broad as the Palm of the Hand (or four Fingers breadth) of a sufficient length, having a double Head; it is to be made Crofs wise, in the form of the Letter X; which is rather to be often drawn about the place of the Fracture, then that the said Fracture should be too close and hard bound; and it is so to be rowled about, that it may draw the Arm unto the hinder parts. And the Cavity also under the Arm-pit neer unto the part affected is to be filled up with Linen Clothes folded together. For so the sick party will the better and more easily endure the binding. The sick person must also be ordered to take his rest, and to keep himself as quiet as he can; and he himself is to bend back his Arm toward the hinder parts. But let not the Swathe be loosened before the seventh day, unless an Itching, or some urgent Cause require it: and if it be from day to day to be loosened, it may likewise be daily drawn a little closer and harder together.

### Chap. 15 Of the Fracture of the Shoulder-blade.

THE Shoulder-blade (by the Greeks called *Omoplatea*, but by the Latines *Scapula*, or that Triangular bone, neer unto the *Vertebrae* of the hinder part of the Neck, and adhering unto the Back and Breast, not by any Articulation or Joynting, but only by the intervention of the Muscles, and before Joyned together by Articulation with the fore part of the Shoulder and the Throat; touching which see more in the Anatomists) may be broken in any part of it; but yet notwithstanding more rarely in that process that is termed *Acromion*; but oftentimes in the part that is nigh unto the *Spina* or Back bones; and in all other its Extremities.

#### Signs Diagnostick.

If the *Acromion* be broken, this is perceived both by the sight and touch, and a certain unevenness is likewise easily to be discovered; especially if we compare together the sound and unsound part. If a broader part thereof, or any part in its extremities

be

be broken, then there is by the touch discovered a certain Cavity; and there is perceived likewise a pricking pain in the part; but a kind of stupidity and benumbedness seizeth upon the Arm stretched directly forth.

### Prognosticks.

1. The Fracture that is in the top of the Shoulder or the *Acromion* is more difficultly Cured, then in any other parts of the Shoulder-blade.

2. If the Fracture be in the Neck of the Shoulder blade, or in the dearticulation of the Shoulder, it is then hardly ever to be healed. For in regard that neer about this Joynt there are the Veins, and Arteries of the Arm-pits, and the Nerves arising from the *Vertebrae* of the Neck behinde, an Inflammation and most grievous Symptoms do happen.

3. The Shoulder-blade bone broken is usually consolidated within twenty four daies.

### The Cure.

If the broken bone adhere still unto the Shoulder-blade, it is then by the Chirurgeons Hand to be restored back again into its proper place. But if this may not easily be done, and that there be need of more force and strength, then a bal of Linen may be put under the Arm-pit, and let the assistant draw the shoulder downward, by drawing about the Elbow unto the Ribs; but let the Chirurgeon himself with his Hand press down the Fracture, and set the bone that is broken. But if the broken bone do not cohere with the Shoulder blade, but that it only yet hangeth thereunto by the Ligaments and the *Periostium*, and that it excireth no great danger by pricking, it is then also to be restored even unto its own place again. But if the broken bones be altogether separated both from the Shoulder-blade, and from the *Periostium* also, and the Ligaments, and prick the flesh, the Skin and the Flesh ought then to be cut, and the fragments to be taken forth. But if they prick not, they are then to be left remayning. For Nature at length expelleth of her own accord that which cohereth not with the rest; although it be sometimes long ere this be done; like as *Ambrose Parry* (in his 14. B. and 9. Chap.) relateth, that a certain Marques had after seven yeers time certain fragments of bones breaking out of his wounded Shoulder-blade, the Cicatrice being opened. The bones being rightly set in their places, fit Medicaments are to be imposed upon the Fracture, and a Convenient binding is to be instituted; and if the top of the

Shoulder be broken, a Linen ball is then to be bound under the Wing thereof; and the binding is not to be loosened before the seventh day, unless there happen something else. Let the sick person lie on the opposite side; and let him (all he can) keep the part in quietness.

### Chap. 16 Of the Fracture of the Sternum, or Breast-bone.

THE *Sternum* (or Breast-bone) it self is sometimes broken, either by a fall, or by a blow.

### Signs Diagnostick

Which is known from the pain, and especially, from the inequality, which is discovered by the touch; and at the compression of the Fingers the broken bone retireth inwardly; and there is a certain sound or noise heard; and there where the bone is broken, there may be notice taken of a Cavity. And there is also difficulty of breathing, the Cough, and spitting of Blood, that for the most part follow thereupon.

### Prognosticks.

1. The Fracture of the *Stern* is very dangerous; in regard that by reason of the *Pleura* Membrane, (which is easily hurt together with the *Stern*) and the noble parts that lie under it, it is wont to attract sad and grievous Evils.

2. But yet it is consolidated in twenty, or twenty four daies, in regard that it is spungy and thin.

### The Cure.

Now that this bone when it is broken and depressed may be restored again unto its own seat, the sick person being laid flat upon his Back, a Pillow is to be put under the *Spina* or Back bone, over against the Fracture; and by some Servant of the Chirurgeon the Shoulder is on both sides to be pressed down; but let the Chirurgeon himself with his Hand press together the Ribbs on both sides, and so let him bring back the broken bones into their places. And after this, those Medicaments that are wont to be administered in other Fractures (and which prevent Inflammation, and serve for the Conglurination of the Fracture) are to be imposed; and the bindings to be instituted with fit Swatches above the Shoulders, in the Crois Figure of the letter X; and this binding must not be over hard, lest it hinder the breathing.



### Chap. 17. Of the Fracture of the Ribbs.

**A**ND sometimes also the Ribbs are broken from violent causes, as a fall, a blow, or the like.

But now the Ribbs are sometimes so cleft (as *Celsus* writeth in his 8. B. and *Chapt. 9.*) that indeed not the top of the bone, but the inward part thereof, (which is thin) may be hurt; and sometimes so that this fall hath wholly broken them. And indeed the broken bones do sometimes decline inwardly; and sometimes they stick forth outwardly: and sometimes notwithstanding that they are wholly broken, yet they are not moved out of their proper places; and sometimes likewise the flesh about the Ribbs is battered and bruised.

#### Signs Diagnostick.

If the Whole Ribb be not broken, then neither is there any blood spit forth, neither any fever following thereupon, nor any thing suppurated, (or but very rarely) neither is there present any great pain: and yet nevertheless this place is lightly pained even upon the very touch.

But if the Ribb be wholly broken, and yet the broken extremities thereof not moved out of their places, by being either driven inwardly, or forced into the Exterior part, there are but very few that are hereupon taken with a fever. And many there are also that do not at all spit blood; neither is there any Pus contracted in the Chests of some, and those indeed not a few.

But if the Ribb be both wholly broken, and the extremities thereof moved out of their places, there is then a certain inequality or unevenness, and Cavity, that may be both discovered by the sight, as also by the touch; and there is likewise a certain rattling noyse heard: unto which also there are divers other symptoms Joyned. There is present a very great and grievous pain, and especially if the internal part of the Ribb be broken; (and this pain much resembleth the pain of such as have the Pleurisy) the breathing is very difficult, the Cough extremely troublesom; and now and then likewise spitting of blood followeth thereupon (the Lungs soaking in the blood flowing forth of the broken vessells) and a fever is also herewithall Joyned, and accompanieth the same. But more especially two evils there are that usually attend the Fracture of the Ribbs. The first whereof is, the puffing-up of the flesh lying upon the Ribb; which is discovered

both by the touch and sight; and if the place be pressed together with the hand, there is heard a certain noyse and sound of the Air going forth thereof. Unto which unless timely Remedies be administered, (in the second place) an Inflammation, and a fever, and an Impostume are wont to succeed. The cause of which thing is the separation of the flesh from the bone, and a weakness brought upon the part with the blow, which cannot therefore sufficiently concoct the Aliment, that by reason of the pain is more abundantly attracted, and flowereth thereunto: which remaineth thereupon partly crude and is partly resolved into vapours and flatulencies or windiness. And sometimes the Corruption of the Ribbs is wont likewise to follow this Malady. For when the flesh is separated from the bone, the Air getteth in in the place thereof; by the contact and impression whereof the bone is offended and corrupted.

#### Prognosticks.

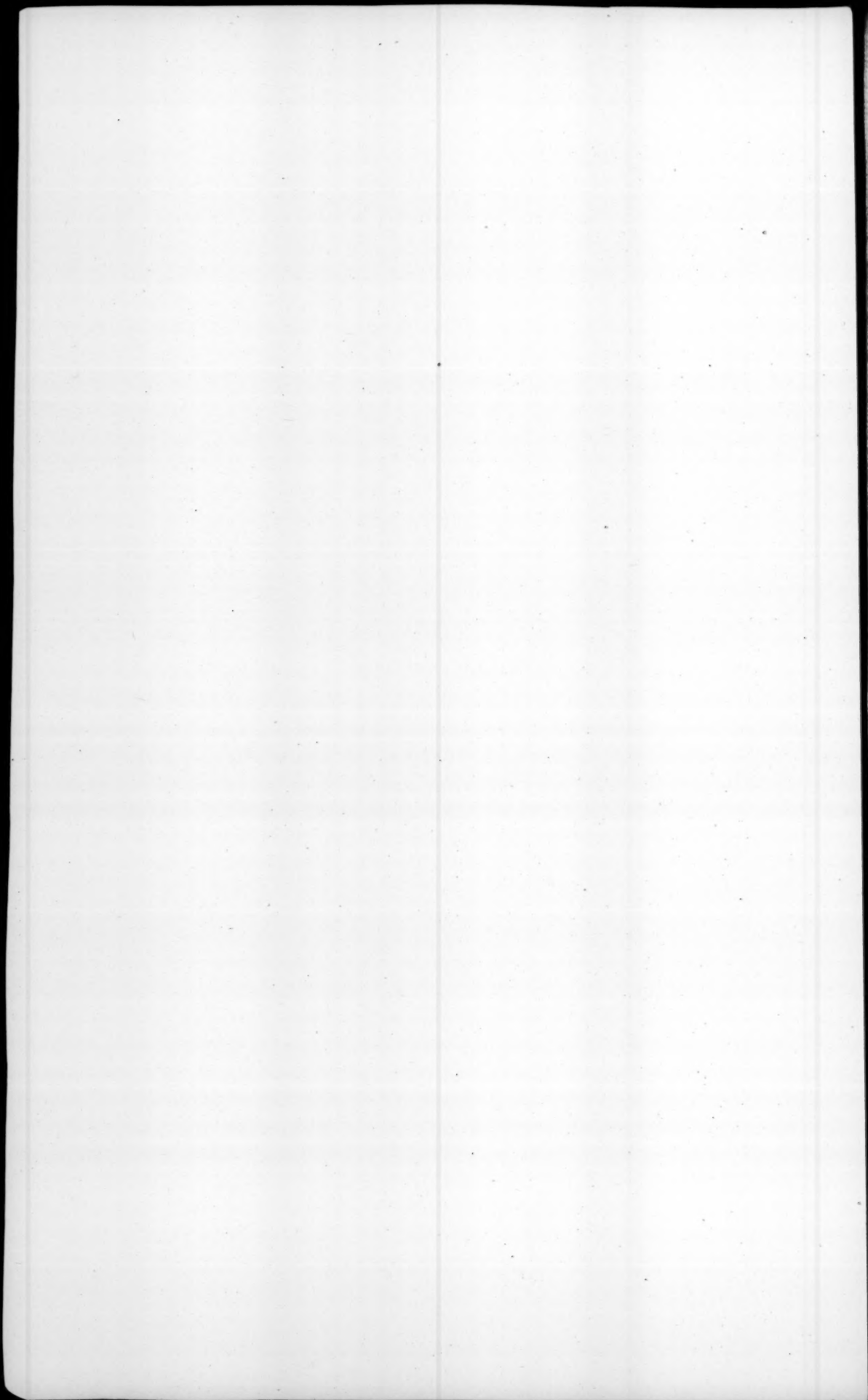
1. If the Fracture be single, without any Contusion or bruising of the parts lying neer thereunto, there is then little or no danger at all: and the Ribbs will grow together again within twenty days.

2. But if the flesh about the Ribbs be battered and bruised, then the evil is very dangerous (by reason of those symptoms that as we have before told you do happen hereupon) & sometimes deadly. Touching which *Hippocrates*; (in his 3. B. of the Joynts, Text. 65.) if the Contusion (sayth he) or the bruising that is caused about the Ribbs be neglected, although upon this a worse Mischief doth not follow, yet notwithstanding it hath the flesh more soft and spongy in the bruised place then it was before: and where such flesh is so left, and not by curing thereof restored unto a good habit, the thing is so much the worse, if filth and swartiness be left about the bone itself; in regard that the flesh will now no more fasten unto the bone in like manner as formerly; and in regard that the bone it self is rendered more apt and ready for diseases: and for this very cause many have their bones vitiated, because that the evil is a long while protracted, ere it can be Cured.

3. And thirdly likewise, the Fracture is full of danger if the Ribb be driven inward and there prick or wound the Pleura Membrane; and then almost all those symptoms that are wont to infect those that have a pleurisy do follow upon the sayd fracture; and the Cure is scarcely ever perfectly accomplished in less then forty days.

The







*The Cure.*

If the whole Ribb be not broken, (or if wholly broken, yet not removed out of its proper place,) and that there be no Contusion of the parts incumbent and lying neer, then some gentle Medicament that is fit and Convenient for a fracture and inflammations, is to be layd on, of *Frankincense, fine flour Bole Armenick, the White of an Egge,* and the like.

But if the broken Ribb stick forth outwardly it is to be pressed together with the hand, and to be reduced unto its Natural situation: and here also a Convenient Medicament is to be imposed.

But if the broken Ribb tend inwardly, we must endeavor that it may be brought back into its own place. And therefore we must first of all see whether by the Cough, and the holding of the breath, or by the help of the hands the broken Ribb may be restored again into its own place: which if it succeed not, then we must lay on some Emplaster that will attract, and that will stick fast unto the Ribb; and then this Emplaster is again with violence to be taken away, that so the Ribb may be brought back again into its own place.

And very Convenient for this use is this Emplaster also.

Take *The finest wheat flour two ounces; Tragacanth, & Frankincense powdered, of each five drams; Mistletoe of the Oake, (to wit, the Glew) six drams; Ichthyocolla or Fish Glue one ounce and half; Whites of Eggs two ounces; Rose-water as much as will suffice;* and mingle them.

Or an Emplaster made of *Turpentine, Rosin, black pitch, Barly Meal, or Beanmeal, Mastick, and Aloes.* And such like emplasters as these are often to be applyed, and then to be taken off when the sick person shall breathe more freely. And I my self remember likewise that some yeers since a certain Cooper having a Ribb broken and depressed in his right side by the violent recoiling of a hoop, which he was bending to make a hoop for a Hoghead, or tub, (so that he could very hardly draw his breath) Coughed extremly, and was not able to lift himself up straight. I applyed and layd on such an Emplaster as this that we have mentioned, and thereby brought back the Ribb again into its proper place.

Some there are indeed who endeavor the bringing back of the broken Ribbs into their places again by the applying of Cupping-glasses: but Most Physicians dislike this practice, there being great cause to fear lest that by this means there be more of the hu-

mor attracted: and that otherwise the flesh above the Ribbs is wont to be puffed up. But if any broken fragment of the Ribb prick the Membrane, so that thereupon most grievous pains and other ill symptoms arise, (in so much that there be great cause to fear death) that part wherein the Ribb is broken is to be opened with the incision knife, that so we may the better come at the fragments that prick, either to pluck them forth, or to cut them off. And if likewise there be present any contusion or bruise, a vein is then to be opened, lest that an Inflammation follow.

The Ribbs being reduced unto their own places again, Nature will then indeed of her own accord generate the *Callus*; which that we may the better assist, some Emplaster that is convenient for a fracture of the bones is to be imposed; among the which this that followeth is one of the chiefest.

Take *Powder of Myrtles, and red Roses, of each one ounce; the Meal of Barly, of the bitter vetch orobus; and of Lentiles, of Beans, and of Mastick, of each two drams; Acron Cupr, Cypress Nuts, (the rinds of them) Frankincense, Dragons blood, Earth of Lemnos, Aloes and Myrrh, of each two drams; Oyl of Myrtle, of Roses, and oyl omphacine, of each nine ounces; Wax and cleer Turpentine, of each half a pound; and make an Emplaster.*

Some there are that (in the progress of the disease) wet and soak the swatches in *Rosemary-water*; which (as they write) is a very special and effectual water in all fractures of the bones.

But if the flesh be moist and flabby, then the Medicaments before propounded are to be imposed; and the place is to be streyned together with swatches and other Coverings, that so the flesh may again be conjoyned with the bone. And if through Negligence of the Physician, or the sick person himself, the Malady be now become old and inveterate, and that the flesh be rendered soft and snorty (so that there be cause to fear lest that the bones, Gristles, and Membranes may be hurt) we are then to do our endeavour that the said snorty Juice may be discurled by such digesting Cataplasms as we shall anon speak of. But if this may not be done, the burning iron is the best Remedy; and yet here we are to be very cautious, that the bone be not made hot, or the inward parts hurt.

If that which was bruised tend toward a Suppuration, the Matter is then to be resolved, and evacuated with a Cataplasim of *Barly meale, Bean meal, or of the bitter vetch Orobis, Camomile flowers,* and the like. As;

Take *Meal of Beans and Barly, of each two*

two ounces; Wormwood, half an ounce; the powder of Camomile flowers, Melilote, and Eldern, of each one ounce; boyl them in Spring Water; and then add Oyl of Camomile and Roses, of each one ounce; and make a Cataplasm.

But if the matter cannot yet be discussed by these Medicaments, all delay is to be avoided, for fear lest that the bone be vitiated; and therefore in that part wherein it most swelleth the part is to be opened either with the Penknife, or with the hot Iron, that so a free passage forth may be opened for the Pus.

### The Dyet

Let the Patients Dyet at the first be thin and very sparing, and such as is required in other acute Diseases. Let the sick person keep himself as quiet as he can, without any Coughing, or Sneezing (as much as may be) let him not talk much, nor laugh, nor Chase. See Hippocrates, in his 3. B. of the Joynts, Text 54. &c. Galen in his Comment. upon the place; and Ambrose Parry, in his 14. B. and 12. Chapter.

## Chap. 18. Of the Fracture of the Spina Dorſi, or Back-bone.

And sometimes it likewise so happeneth, that from external and violent Causes the Spina Dorſi (or Back-bone) and its Vertebrae are broken.

### Signs Diagnostick

If the Spina or Back-bone be broken, then there appeareth a Cavity in that place, and there is a pain and pricking felt; in regard that of necessity those broken fragments of the bones must needs be very Thorny and Pricking, as Celsus tels us in his 8. B. and 9. Chap. And if any process of those broken bones that stick forth be broken, this is discerned by the touch, because that it may be moved this way and that way. And moreover, if the sick person lie upon his Face the pain is so much the greater, and far more then if he stand upright. For there the Skin is extended, and bruised with the sharp broken fragments: but if the sick person stand upright, the Skin is then loosened, and not so much pricked by the sharp points of the broken bones, that prick as if they were Thorns or Goats.

### Prognosticks.

1. The process of the Vertebrae is easily of it self consolidated, unless some other evil happen to follow, in regard that the bones are Spungy and thin.

2. Otherwise this Fracture is for the most part Mortal, by reason of the hurting of the spinal Marrow, and the Membranes, and the Nerves; and especially if the Fracture happen neer about the Vertebrae of the Neck.

3. And if there happen a Fracture in the Vertebrae of the Neck, there followeth a Palsy of the Arms and Hands; but if the Fracture chance in the inferior part, then there followeth a Palsy of the Thighs, Legs, and Feet; and this is deadly: but if the motion and sense be not altogether abolished, there is yet some smal Hopes left of recovery.

4. If in the Fracture of the Vertebrae there shall appear any voluntary Egestion of the Excrements, and that there happen a suppression of the Urine, it is a very desperate and deadly Sign.

### The Cure.

Although there be here but little ground for Hope; yet nevertheless that the sick person may not be wholly left in a helpless condition, the broken Apophyses of the Back-bone are again to be put back into their own places (if they be not altogether broken off) and Medicaments are to be imposed that may moderate the pain, prevent an Inflammation, and further the Conglutination of the bones; and such medicaments as these have already been very frequently mentioned. But if the process be wholly broken off from the Perioſtium, the Skin is then by an incision to be opened, and the piece of bone to be drawn forth, and the Wound afterward in a due and convenient manner to be healed. And this is likewise to be done, if the fragments or broken pieces of the other Vertebrae press together and prick the spinal Marrow and the Nerves thereof; for otherwise the life may be much endangered.

Unto the Fractures of the Spina there belongeth also the Fracture of the Os Sacrum, and the Crupper-bone; which if they shal be so broken and bruised that thereupon the Spinal Marrow be hurt, the Malady then is very dangerous, if not altogether deadly. But if there be any the least hope left, the Finger being put up into the Arse even unto the broken place the bone that is broken is to be driven forth; but outwardly by the other Hand, (or else by the help of some assistance) the bones are to be made equal and even, and so to be put back into their own places again; and afterwards Medicaments convenient for the Fracture are to be applied and laid on.

The Fracture of the holy bone, and the Crupper.

## Chap. 19. Of the Fracture of the Bones of the Hand.

**T**HE Bones of the Hand (which are divided into the bones of the Wrist, upper part of the Hand, and the Fingers, are likewise sometimes broken.

*Signs Diagnostick.*

¶ The Fracture in these bones is easily known both by the sight and touch; in regard that these bones when they are broken do for the most part decline either unto the exterior or the interior parts.

*Prognostick.*

These Bones without any great ado, (and indeed within twenty daies) do perfectly grow together again, and so are healed.

*The Cure.*

Let the sick person stretch forth the Hand that is hurt upon an even and smooth Table: and then let the Chirurgeons assistant stretch forth the broken bones, but let the Chirurgeon himself restore (with his Hand) the bones into their places again. When the bones are well set together, then some Medicament (such as is wont to be administered in Fractures) is to be imposed: and then afterward the part is to be wrapt about with a Swathe. And indeed if the Fingers chance to be broken, they are to be tied fast unto those sound Fingers that are next, that so by them (as it were by Splinters fastened on) they may be kept unmoved in their places. And then at length the hollow of the Hand is to be filled up with a bottom or ball of Linen rowled up together. For so by this means the bones when they are set are the more easily kept in their places, and the Fingers preserved in a middle Figure. But if either in the extending or contracting the Fingers there be any *Callus* generated, the Office of the Hand in laying hold on any thing is much hurt. And let the Hand also (with the Arm hung in a fit Scarf or Swathe from the Neck) be kept in rest and quietness.

## Chap. 20. Of the Fracture of the Hip-bone.

**T**HE Hip bone consisteth of three bones; of which the First is the *Ilium*; the Second, the *Iscion* bone; and the Third, the *Ischion* bone; which in Infants may even be separated; but yet nevertheless in persons of ripe Age they grow so fast together that they can very hardly be parted asunder. But now

these bones may be broken (like as those of the Shoulder-blade) either in their Extremities, or long waies, or in the middle.

*Signs Diagnostick*

This Fracture is easily known by the pain, which is more especially exasperated by the touch and compression; by the Cavity and unevenness; and also by the pricking and benumbedness in the Leg of the same side.

*Prognostick.*

These Bones are consolidated in the space of twenty four daies.

*The Cure*

The broken bones are with all possible speed and diligence to be set together, and to be restored into their own places; and then afterward fit and proper Medicaments are to be laid on. But if any fragment of the bone be broken off, and by pricking excite pain, and that there be any fear of an Inflammation, there are some who perswade us that even at the very first dressing an incision is to be made in the Skin, and the broken piece of bone forthwith taken out. But whereas it is very seldom that these fragments lie hid under the Skin alone, but even under the very Muscles themselves; such alike Section as they advise us unto may not be instituted without much danger. And he that will needs attempt it, let him be very cautious lest that he hurt the Heads of the Muscles, or some one of the principal Vessels; or that greater Nerve which is stretched forth into the Muscles of the Thigh and Leg.

## Chap. 21. Of the Fracture of the Whirl-Bone in the Knee.

**A**ND sometimes likewise even the Whirl-bone itself is broken; and this happeneth sometimes in the length of it (in respect of the whole Thigh) sometimes in a transverse, and sometimes in an oblique manner; and sometimes it is broken into two parts, and sometimes into very many pieces; and sometimes again this Fracture is with a Wound, and very often without.

*Signs Diagnostick*

The Fracture of this bone is easily discovered by the distance of the broken bones, appearing by the touch; by the Patients weakness and inability in going; by the Cavity that is perceived (in the place where the Fracture is) both by the sight and by the touch; and by the Crashing Noise and sound that is observed in the handling thereof; and in its motion,

Non

*Prognosticks.*



*Prognostick*

1. The Whirl-bone indeed (as all other thin bones) easily groweth together again, if it be but rightly Joynd together, and so preserved.

2. And if the fracture be made in the length thereof, the bones may very easily be joynd together, and being so joynd they may without any great difficulty be so kept in their own places by the use of pillows and Swathes. For whereas about the whirl-bone the extremities of the Seventh, Eighth, and Ninth<sup>3</sup> Muscles, that move the ankle and leg, run along together, and end in that most strong Tendon that is implanted in the Whirl-bone; and that the Muscles are wont of their own accord to be moved and drawn toward the place of their original; therefore even without any great industry and paines, the fracture that is made long wayes may be reduced into its own place again & the bones most closely conjoynd as before; and so no great cause to fear the bunching forth of any *callus*, & a lameness following upon this fracture. *Parvus* indeed (in his 14 Book. and 22 Chapt.) writeth that he never saw any, who having this bone broken was not lame, so that he halted al his life after it: and this even therefore, because that the Concretion of the *Callus* being produced, the Consolidation doth hinder the free bending of the knee. But although this may easily be granted as touching the transverse fracture; yet notwithstanding *Gnibelmus Fabricius* (in his fifth Cent. and 88 Observat.) hath rightly determined, that this is not alwayes necessary (especially in the fracture that is made in the length of the bone) in regard that there is no necessity that there should evermore be bred a *Callus* so sticking forth; that it should cause an impediment of the motion in the knee, and so consequently a lameness and halting: and we may see that in the fractures of other bones Nature doth usually so generate the *Callus*, and with that Neatness and skil, that oftentimes there scarcely remaineth any the least sign or token of any fracture appearing; and this especially happeneth when the *Periostium* is whole & unbroken, which retaineth the matter of the *Callus*, that it may not grow forth overmuch, nor bunch out too far.

3. But if the fracture be made either transversely, or obliquely, all the industry that we can use will hardly so cure it as that no lameness nor halting shall follow thereupon. For seeing that the Seventh Eighth & Ninth Muscles moving the Ankle draw it upward toward the hip, but the Tendon that under the knee is inserted into the shinbone draws the whirlbone downward, the bones of the broken whirlbone are so disjoynd that they can hardly by any art be joynd together again, or being joynd can be so kept toge-

ther; whereupon the *Callus* buncheth forth, & the Muscles moving the Leg and Ankle are hurt, and so a Lameness and halting followeth.

*The Cure.*

The Leg is first of al to be extended: And then after that by the Chirurgeon the Whirlbone (whether it be broken into two or more parts) is to be Joynd together again; and an Emplaster or Cataplasme be fitting the Fracture (that may keep together the bones when they are set) is to be layd on; and the Member is conveniently to be bound up; and by imposing of rowls of Straw (as is wont to be done in the Fracture of the Leg, the Member is to be kept immoveable, and great Care must be taken that the Leg be not at all bended: for if this should be, the broken Fragments that were set together would be again removed out of their places.

If some sharp fragment of the bones be separated from the rest of the bone, and prick the Skin, some there are (as I told you before touching other Fractures) who advise us to cut into the Skin, and so take forth the bone.

If grievous Symptoms shall happen to follow, we must timely oppose them with such Remedies as in other Fractures.

*Chap. 22. Of the Fracture of the Bones of the Foot.*

And Lastly, The bones of the Foot are likewise sometimes broken; of which how many bones there are, As for that we refer you unto the Anatomists. But *Hippocrates* (in his 2 Book of the Joynts) writeth that the bones of the Foot, as likewise of the Hand, are not at all broken, unless the fleshy parts be wounded by something that is very sharp or heavy. For these bones being harder then ordinary, these things that are sharp and very heavy, if they break these Bones, they leave not the Skin lying upon them whole and sound, but much bruised. And *Paulus Aeginet.* (in his 6 B Chap. 106.) writeth, that the Ankle can by no means be broken; not only by reason of its hardness, but in regard that it is fenced and guarded round about.

*Signs Diagnostick*

If the bones of the Foot be broken, it is easily found by the sight and touch, in regard that these parts are void of flesh: and therefore if they shall stick forth upon their breach, this is easily discovered by the sight, and touch.

*Prognosticks*

*Prognosticks.*

1. The Fracture of these Bones is not of itself very dangerous; yet because they are greatly broken by reason of the forcible and violent Cause, the parts incumbent and that lie neer (being Fleishy and Nervous) are with all bruised and wounded; whereupon most grievous pains, Inflammations, and other Evils do arise.

2. And yet notwithstanding for the most part they grow together again in twenty daies, unless such as are nigh unto the Leg: for these being greater require the longer time for Consolidation.

*The Cure*

The Cure is almost one and the same with that of the broken bones of the Hand. To wit, there ought (in the first place) to be a fit extension; and the Bones (whether they stick forth unto the Superiour or the Inferior part) are to be forced back into their Natural seats; which may most fitly be done, if the sick person stand with the broken Foot upon a plain table covered over with a woollen cloth. And then Secondly, fitting Medicaments (such as the Fractures require) are to be administred. And Thirdly, The Foot is

to be wrapt about with Swathes. And since that Splinters cannot conveniently be imposed upon the Foot, by reason of the unevenness of the place the *Splenia* Coverings are to be made use of, and the place to be bound with Swathes, that so the bones being set in their places may be there kept. And yet nevertheless the Scituation and placing ought to be ordered otherwise then in the Hands: For our Hands being given us to lay hold upon, the Fingers (as we told you before in the 19: Chapr.) are to be placed in a Crooked Figure; but our feet being given us to stand upon, and to walk withal, are to be Scituated in a straight Figure, and not crooked, lest that their Action be depraved and hindered.

And thus much we thought good also briefly to speak touching Fractures. For in regard we have extant the most learned Books of *Hippocrat.* upon this very subject, touching Fractures and the Joynts, and the most accurate *Comment* of *Galen* upon them, I held it altogether needless and not worth while to treat more largely of them, as I see that others have done before me: but think it fitter for me to refer the Reader unto them, if he desire to see more hereof.

THE





THE  
FIFTH BOOK,  
THE  
SIXTH PART.  
Of Luxations.

Chap. 1. Of Luxations in general.

Here are very many Bones in the Body of Man which are composed and joyned together after divers sorts. But they are chiefly composed by a *Symphysis* and Articulation. A *Symphysis* is a union of the Bones without motion: but the Conjunction by Articulation is composed for motion; the differences of it are chiefly two, a *Diarthrosis*, and *Synarthrosis*. *Diarthrosis* is with a manifest motion; *Synarthrosis* with an obscure one, of which consult with the Books of Anatomists.

When therefore the Bones which are joyned by Articulation do fall out of their place, the Disease is called by the Greeks *Exarthrema*, by the Latines a Luxation, which is the falling down of the Joynt out of its place (which is called the *Acetabulum* or hollow) into another place; by which voluntary motion is hindered: where by a Joynt is understood, as *Galen* and *Hippocrates* also do teach *Artic. 1. Text. 1.* not that aggregate of the two ends of the Bones joyned together, but only the head of the joynt.

The Causes.

But the Causes of a Luxation are either Internal, or External. The Internal are humors which falling down upon the joynts either do relax the Ligaments that they suffer the Bones to fall out of their seats, or by filling them up do shorten and contract them, that they draw the heads of the bones out of their seats. To which hereditary defects must be referred, whenas Experience doth teach us, That oftentimes those that have bunches in their backs do generate the like, and lame folks beget lame. But the external violent Causes are, blows, falls, violent extension, and the like, which can expel or draw forth the Bones from their seat; and

that sometimes is done even in the Birth, and the Arms or Thighs may be luxated while the Infants are drawn forth with violence by ignorant Midwives; nay in the Mothers Womb Infants may have a luxation of their bones by a blow, fall, compression, as *Hippocrates* seems to intimate 3. de Art. 88. and 94. and 4. de Artic. Text. 2. and 3. but all causes of what kind soever do cause luxations either by violent distension or impulsion; most commonly a luxation is caused by violent impulsion, when from causes happening from without, as falls, jumping, blows, and the like, the bones are violently expelled out of their seats. All other causes are to be referred to distension, to wit, when the Cavities receiving the heads of the bones (which the Greeks call *Cotyle*) are rendered either narrower, or larger and relaxe, this Cavity is made narrower, when a humor or some matter doth possess the bosom of the joynt and drives the bone out of its seat, which happens sometimes in pains of the joynts: but the Articulation is made larger or looser when the brows including the bosom are broken, for so the bones may more freely wander and fall forth; and the Articulation is made looser also, when some humor doth too much mollifie and relax the Ligaments, and renders the whol Articulation more loose. The same happens when the Ligaments are too much distended or broken.

But the Bones are more and easier luxated in Children and young folks whose Ligaments are softer and weaker than in those of riper age, whose Ligaments are firmer and stronger. It happens also in them whose bodies are wasted and have weaker Ligaments; but those who are fleshy and well habited have not their joynts easily fall forth, whenas the joynt is on every side straightly girt in with strong Muscles; also those joynts are easier luxated which are composed for many sorts of motions; but those which have fewer different motions do not so easily fall forth of their seats; those joynts also which are contained with one Ligament are more easily luxated than those with two; the greater bones also are more difficultly luxated, and not unless by a violent cause; the lesser bones more easily: last of all, some bones do more easily, some more hardly fall out of their places, according to the nature of the Articulation, as afterward shall appear in particular. This must be observed in general, That the joynts which are in a plainet bosom are more easily luxated; but those which are hid in a deeper bosom more difficultly.

The Differences.

The proper Differences are taken either from the Subject, or the Form, or the Efficient Cause. From the Subject, because the bones which are luxated are joyned either by a *Synarthrosis* and with an obscure motion (as when the broad bone of the shoulders departs from the shoulder bone;)

The Differences from the subject

O o o

of

or the Channel Bone from the top of the broad bone of the shoulders, or the radius from the Elbow; which kind of Luxation the Arabian Interpreters call a disjunction, when the bones gape as it were; or by a *Diarthrosis* with manifest motion, which Luxation is most properly so called. There is also a peculiar kind of Luxation, but improperly so called, when the Epiphyses of the bones are pulled from the bone on which they were placed, which happens chiefly to young folks.

*From the Form* From the Form because the Joynt sometimes wholly falls out of its seat: which Luxation is called by the general name *Exarthrema*, or Luxation; but sometimes it falls forth only in part, and to the brink of the bosom or hollow, which the Greeks call *Pararthrema*, the Latines a Subluxation; to which kind of Luxation also belongs that elongation, when the Ligaments being luxated and made longer, the joynt indeed according to the longitude doth sometimes depart from its seat, yet falls not wholly out of it.

*From the variety of the situation* But from the variety of the Situation to which the joynt falls forth there are fetched three differences chiefly: The first is, if the bone which is naturally placed in the upper part fall out to the lower; or on the contrary The second is, if that become on the right side which ought to be placed on the left; or on the contrary it fall from the left to the right, which others call outwardly or inwardly. The third is, if that which was placed in the fore part fall to the hinder, and on the contrary that which was placed behind fall out to the fore part; and the joynts of some parts may be luxated into all these differences, some only into certain differences, nor all; so the elbow, hand, thigh fall forth into four differences, viz. To the inward, outward, forward, backward, but cannot upward; the knee falls out into three situations, viz. The inward, outward, and hinder part towards the ham; but the opposition of the patel bone hinders its falling out to the fore part, of which shall be spoke hereafter in the Luxations of the particular parts.

*From the Efficient Cause* The Difference is taken from the Efficient Cause, because the Luxation is sometimes from external Causes, as falls, blows, jumpings, running, and from a violent distortion, extension, and impulsion of the part, but sometimes from internal causes, as while a humor sliding into the cavity of the joynt drives it out of its place.

*Improper Differences* There are also certain improper Differences, or rather complications of other preternatural Affects with Luxations, as that an Inflammation, fracture, wound, or somewhat else is joyned with the Luxation.

### Signs Diagnostick.

A Joynt being fallen forth into another place is easily known by the sight and touch; for there appears a Tumor in the part into which the joynt is fallen, but a hollownes in the place from whence the joynt is fallen; and that appears so much the easier, if the body be not very thick and fat, or the place be void of flesh. Again, if the Luxation be perfect, that Member is made shorter, whereas the joynt no longer included in its Cavity, but falling out of it, is drawn upwards: yet sometimes the Member becomes longer, as is afterwards said in particular. When then the Member luxated is alwaies unlike to the sound one in situation, figure, and longitude, we must alwaies compare the Member affected with the like sound part of the same name, Arm with Arm, Thigh with Thigh in the same man; where yet we must observe, that the Member with which we compare it be sound, and have no fault. Thirdly, because Articulations are made for motion, if a joynt fall out of its natural seat it must needs be that the motion of the joynt is hurt; therefore where there is a suspicion of a Luxation, yet the motion is not hurt, we must conclude that there is yet no luxation made. Lastly, because a joynt falling forth of its seat doth compress the sensible parts into which it is fallen, as the Tendons, Nerves, Muscles, from thence there is raised a pain.

And these are the signs of a perfect Luxation; but if there be only a Subluxation, the Signs propounded will either be more gentle, or some of them will be wanting.

If there be a Luxation of a joynt joyned by a *Synarthrosis*, in which the Bones do gape, it is known by the thickness of the Member greater than usual, and by a greater bunching out than the heads of the bones do consist of.

As concerning the Causes, the external and violent are apparent by the relation of the Patient, and the Luxation proceeding from thence happen suddenly; but if the Luxation be by reason of the looseness of the Ligaments, it happens by degrees; and the luxated Member is moved and totters up and down with inordinate motions; and while the joynt is forced into its seat, the Member indeed acquires its natural longitude, which being let alone again presently it becomes longer.

Also if the head of the Bone luxated be thrust with the fingers to the contrary part, it easily recoils back; every where about the joynt there is a Cavity begotten, that if the finger be thrust into the joynt it easily goes in, no body resisting, as if it were empty.

When some *Epiphysis* is pulled off from its being, it is known by the impotency of motion, and by the crackling, when they are handled and moved.

*The signs of the Causes*

*The*

**Prognosticks.**

1. In the Bodies of Children and yong folks, and those that are softer the bones luxated are easily restored, yet being restored are not so faithfully retained; the contrary happens in riper and harder bodies.

2. The Joynts which are dedicated to fewer differences of motions are more difficultly replaced, but better contained.

3. By how much the further the joynt is fallen from its bosom, by so much the more difficultly 'tis restored; by how much the neerer, by so much the sooner.

4. The Luxations in which the brows of the bones are broken are worst of al; for though the joynts be restored to their places, yet they continue not long, but fall out again upon the sleightest cause.

5. The joynts which are fallen forth by reason of the Laxness of the Ligaments, though they be replaced, yet do easily fall forth again.

6. Those Luxations which have a great pain, inflammation, or wound happen on them, are hard to be cured, and want not their danger, and cannot be restored without danger of Convulsions, nay of death. Wherefore if the bone being reduced the Nerves be distended, it must presently be forced out again, as *Celsus* doth counsel.

7. Old Luxations and which are grown hard with a Callus, and which have a clammy humor filling up the Cavities of the Bones, are never or very hardly cured; therefore every Luxation must presently be replaced.

8. They who in their Childhood have had their joynts fall forth, and are not replaced, they grow less than others.

9. What Member also soever hath been troubled with a long continued Luxation, by how much 'tis the less able to be moved by a natural motion, by so much the more 'tis extenuated and wasted, both because by intermission of motion the Native heat of the part is dulled, and because the Vessels are comprest by the luxated joynt, and the necessary influence of blood and spirits is hindered.

10. A Luxation of the head brings death, by reason of the compression of the Spinal Marrow presently at its first rise, and the prohibition of the influx of animal Spirits.

We shall afterwards speak in particular of the Prognosticks of the rest of the joynts.

**The Cure.**

The Bone luxated, and which is fallen out of its natural seat, shews a reposition to its natural place; and this Indication is satisfied, and Luxations are cured by straining and forcing them to the part opposite to that from whence the change is made; which replacing of the joynts fall-

len forth of their seats is called *ton arbron embolè*, and *arthrembole*. But the replacing of luxated Bones is completed three waies, either by the hands of the Chirurgeon and his Servants, which is the most simple, and is called *Palestrical*, because 'twas used in the wrestling places if at any time the Fencers Limbs were luxated; and 'tis convenient in soft bodies, and where the evil is fresh; or by some vulgar instruments the joynts are forced into their seats, as by the help of reins, swathes, ropes, ladders, seats, two leav'd doors; which is called the *Methodical way*, and is convenient for children, women, and the stronger males, and for old luxations; or 'tis performed by instruments and certain singular engines, and 'tis called *organical*, and 'tis applied to stronger bodies and old Luxations, and altogether to those which cannot be restored the two former waies. But concerning such Engines see *Hippocrates de artic. et fractur.* and *Oribasius de machin.* Others hold only two waies, the *Palestrical*, and *Physical*; and under *Physical* comprehend the *Methodical* and *Organical*.

But what way soever the restitution of the luxated bone is performed, four operations are necessary to it, *Extension*, *Replacing*, *Rowling*, and *Confirming* & placing of the Member reduced: for first of al, whenas the Muscles are contracted, as we have

said of *Fractures*, there is need of extending the luxated member, which must be done presently after the Luxation is made; or if the Chirurgeon be called late, when the fear of Inflammation is over; and so far it must be made, that

*Extension:* some free space may be left between the bones, lest the joynt or head of the bone be raised, or the brows of the bosome be broken; and in the *Extension* a convenient figure of the part must be observed, and the Muscles on one part must be kept whole, and not be distorted, to wit, lest the Head of the Muscle be in the internal part, and the end of it in the external. But *Extension* is made either by the hands of the Chirurgeon, or his servants; or with *Reins*, *Ropes*, and *Swathes*, or with *Instruments* and *Engines*, as was said before.

*Replacing* | Sufficient extension being made, the bone which is fallen out of its place must be replaced in it, which labor the Greeks call *Mochlia*, and *Mochleusis*, viz. the compulsion of the bone luxated and extended into its seat: but that this operation may be done rightly, both the nature of Articulations, and how all the bones in the body are joynted together, and the differences of Luxations ought to be known; for the Chirurgeon will not know certainly into what place he ought to force the luxated bone, if he do not rightly know before, out of what natural place it is fallen; for the Chirurgeon ought to consider from whence the Joynt hath first fallen, what pro-



gress it hath made in its fall, and whither 'tis come at last; and from the end of its fall, the same way by which it fell forth, to force it back again to the Joynt from whence it fell: as if a Joynt be fallen forth from the left towards the right, he ought to force it towards the left; if it be fallen from the right towards the left, then towards the right; that which is fallen towards the forepart must be forced to the hinder part; that slipped forth to the hinder part towards the fore part. And there are so many waies of this reduction, as there are Joynts; for example sake, the Shoulder is one way, the Foot another, and the *Vertebrae* another way reduced into their place; and the Shoulder otherwise when 'tis fallen into the Arm-pit hole, otherwise when to the fore part. But the bone must be forced into its place gently, and if need be applying first of all laxative & mollesying Medicines, lest there be a contusion or grating of the head and bosom upon one another, or a pain or Inflammation be caused; and we must avoid wheeling about the head of the bone, lest it break.

But we shall know that the Joynt is rightly reduced, if the member and juncture recover its natural figure, longitude, and lost motion, and it wholly agree with the like named sound member, and the pain which was present before do cease. There is wont also for the most part to be heard a certain crackling and sound when the bone returns into its Cavity, but we must not trust to this sign alone, for sometimes there is a crackling made, and a noise heard by reason of the breaking off of the brows of the bone, which may be, when the head of the bone is so struck against the brows, that somewhat of them is broke off; and then whenas that part of the brow broken off doth sooner get into the bosom then the Joynt, the replacing cannot be right. A crackling and noise also may be caused, when in a violent reducing the joynt or head of the bone hits against the bosom, and contuseth it, whence the Cartilage is separated from the rest of the bone, and there is a difficulty of motion; therefore all the other signs must be joynted together.

*Binding:* The Joynt being reduced into its seat, the distention must be bated, and we must suffer the Muscles to return to themselves, and afterwards the member must be so strengthened that the Joynt cannot again go out of its place; which is done almost after the same manner as in Fractures; for first of all before binding up be ordered, astringent medicines must be laid on, which hinder a flux of humors and Inflammation, and contract the Ligaments relaxt, and strengthen the part; of Bole, *Sanguis Draconis*, Pomegranate Pills, Pomegranate flowers, Roses, Frankincense, fine Flour, and the like, mixt with the white of an Egg; if the pain be great, those things also which together with an astringent faculty do mitigate pain, as Oyl of Roses, Mastick, and the like. Or,

Take of the greater Comfrey, Bean flour, Bole armenick, of each three ounces; steep them in Vinegar and dry them: afterwards

Take of Litharge, Wax, Rosin, of each three ounces; melt them over the fire and add the things forementioned steeped in Vinegar; and last of all two ounces of Tragacanth. Make a Plaster. Or,

Take of new Wax three ounces, Mistletoe of the Oak, Mastick, Rosin of Pine, of each half an ounce; mix them.

Then the Member must be conveniently bound up, with Rowlers and Bolsters, as we said concerning Fractures. And *Gabriel Fallopius* teacheth at large, *Traict. de Luxat. c. 5.* that the bone may be kept in its place, and the flux of humors hindered. If need be, and the figure and nature of the part will suffer it, Splints must be laid on of Pastboard, or Leather, or some other convenient matter.

Last of all, the member must be placed gently, evenly, and that the position keep a middle and natural figure, lest pain be caused, and it must be kept unmoved til the fourth or seventh day, unless an itching, pain, or other Symptom do urge; and afterward it must be strengthened with convenient Medicines.

## Chap. 2. Of a Luxation with Pain, Inflammation, Wound, Fractures.

**B**UT it happens sometimes that the Luxation is not alone, but other preternatural Affects, Pain, Inflammation, Wound, and Fractures are joynted with it. But if before the Physician be called Pain and Inflammation hath already seized on the part affected, we must not try to restore the luxated Joynt, til the Pain and Inflammation are allaid; for if that be tried before this is done, it is to be feared, lest by the distension of the Nerves a Convulsion, or some other dangerous Evil arise; therefore before the replacing of the Joynt be attempted the pain must first be mitigated, and the Inflammation allaid, by those medicines which are formerly mentioned. If after the Joynt be replaced, and the binding be loosened, there be an Itching, the place must be sprinkled with warm Water, that the humor the cause of Itching may be discaust, and the pain abated; otherwise if there be no Itching we must forbear warm sprinklings, lest the Ligaments be relaxt; or rather when the binding is loosened, the place must be fomented with some strengthening Decoction. As

Take of the Leaves of Myrtle, Oak, Wormwood, of each one handful; red Rose flowers half a handful, Pomegranate rind one ounce, Pomegranate flowers, Mistletoe of the Oak, of each half a handful: Boyl them in barsh Wine.

A Luxation  
with a  
wound;

If a Wound be joynd with the Luxation, that is very dangerous and oftentimes kills the man, whenas from distention of the Nerves and Muscles, a Pain, Inflammation, Convulsion, acute Fevers are caused; and the danger is by so much the greater, by how much the Member is greater, and the Nerves and Muscles about it are the greater; whence a Luxation of the Shoulder and Thigh with a Wound for the most part brings death: and the danger is the greater by how much the Wound is neerer the Joynt; and therefore Hippocrates is against the reducing of luxated bones and their bindings up, and commands to use at the beginning only things that assuage pain, and take away Inflammation, and thinks that none of these can safely be reduced, besides the Fingers, Hands, and Feet; & in these also he commands all things to be done very diligently; for neither a Finger (in which there is least of danger) ought to be replaced when there is an Inflammation, but either before the Inflammation comes, or after it is allayed. But much more is this to be done in other Joynts, of all which Hippocrates (Artic. 4. Text. 16. and 17.) saith, *For in whomsoever the bones of the Leg luxated with a wound made, do wholly hang forth from the joynts of the foot, whether they tend inwardly or outwardly, they are not to be reduced, but let them suffer be that will to replace them: for ye may know, that if they remain reduced they shall die, and their life shall be of very few daies, for there are few of them which pass the seventh day; for that which kills them is a Convulsion; moreover it happens also, that both the Leg and the Foot do gangrene. We must know for certain that these things will so come to pass.* And there also Text 28, 29, 31. which places there you may see, and also Galens Comment. And therefore presently at the beginning, and before an Inflammation come in a Fracture with a wound, we must try whether the joynt may be restored into its seat with moderate extension (for it can by no means endure strong) which if it succeed to your mind we must labor chiefly in this to keep off an Inflammation; but if the joynt being replaced an Inflammation or Convulsion doth happen, the joynt must be thrust out of its place againe (if it can be done without violence) or if we fear this danger, 'tis safer (especially in the greater joynts) to defer the reducing til the Inflammation is ceased, and the fear of it is past. When the Inflammation is now ceased, which is wont to be about the seventh or ninth day, both must be signified & foretold to the standers by; and the danger which is at hand by the reducing, and the weakness of the part, by which the man is rendered lame and maimed if the joynt be not restored: and if they urge the restitution of the joynt, it must be attempted without any violence; afterwards the Cure of the Wound must be ordered as in a fracture with a wound, but the member it self must be so placed

that the Patient (as much as may be) may be free from pain. See Hippocrates of these things in the place before alleadged. Sometimes also it happens that a Fracture is joynd with a Luxation, therefore the Chirurgion must be wary; and if the Fracture offer it self neer the Joynt, let him consider whether the Joynt be whole or luxated, lest while he cure the Fracture he neglect the Luxation: Thus I remember a Neighbors Child, a Boy about nine yeers of age, whenas a Vessel into which they were wont to pour their hot Drink after it was boyled, fell upon his Thigh, and his Thigh-bone was broke, and the Joynt of the same luxated, which when the Chirurgion observed nor, and only Cured the Fracture and restored not the Hip-joynt, the Boy became lame. But if there be a luxation with a Fracture, the Member must be extended the common way, and the luxated Joynt must be reduced into its proper place, and the broken bones must be conformed and composed; and first of all indeed the luxated Joynt must be replaced if it may be done, then the Fracture must be Cured, and sic Medicines must be laid on them both, of which we have spoken already; and convenient binding up must be ordered; but if the Joynt cannot be restored to its place without danger before the Fracture be cured, then the Fracture must be cured first; afterward when the callus is generated, we must endeavor that the luxated Joynt also be restored.

Last of all, if a Luxation by reason of an Inflammation coming upon it, or a Wound or Fracture joynd with it, cannot presently be restored, but there is a callous hardness contracted about the Joynt, the place must be fomented either with plain warm water, or with a mollesying Decocti-on made of Marsh-mallows, Mallows, Camomile flowers, Fenugreek seeds, and the like; but after the Fomentation the Joynt must be anoynted with Oynment of Dialthea, or some other mollesier, or this like Cataplasim must be laid upon it. Take of Marsh-mallow roots, wild Cowcumber, of each three ounces; Mallows, Marsh-mallow leaves, of each a handful: Boyl them til they are soft, and searce them through a hair Searce; add of the Flour of Fenugreek, Flax seed, of each half an ounce; Oyl of sweet Almonds, Hogs grease, as much as is sufficient; make a Cataplasim.

If the hardness be greater, add to the things boyled, wild Cowcumber root, and lay on it Diachylum magnum,

When the Member shall be sufficiently mollesied if need be Digesters may be applied; as Betony, Sage, Hyssop, Groundpine, the Plaister of Betony, and the like. Or Suffumigations with a fire-stone or Mil-stone, or Bruminous and Sulphurous Baths, if they may be had; Lastly, when whatsoever was hard is mollesied and dissolved,

The Cure of  
an old Luxa-  
tion.

the

the joynt in convenient manner must be restored to its place, and the rest must be performed as was said above, Chap. 1.

### Chap. 3. Of a Luxation of the Mandible.

**A**Nd let it suffice to have said this briefly of Luxations in general; now we must say somewhat in particular of the Luxations of the chief joynts.

And first of all as concerning the Luxation of the Mandible; whenas Nature hath made only the lower jaw movable in all creatures, the River Crocodile excepted, (which as Aristotle witnesseth, 1. Hist. Animal. c. 11. and 3. Hist. Animal. c. 7. moves its upper Jaw) it is easily apparent that that only can suffer a Luxation. The which notwithstanding is not easily luxated, by reason of the most straight coarticulation of it with the bones of the head, and the exceeding strength of the Muscles that draw it upwards; but into what part the Mandible may be luxated, its structure and insertion do plainly teach us: For as concerning its structure, it hath two processes in its hinder part on each side; the former of which drawn forward being broad and thin ends as it were in a point; but the latter is carried backwards and makes a long and transverse head; that is inserted into the *Os Jugale*, but this is fitted to the second bosom engraven in the Temple bone.

#### The Differences.

From which it doth manifestly appear that the lower Mandible cannot be luxated to the hinder part, because the Teat-like processes of the Temple bone do hinder it; nor to the right (especially in those of ripe age) because the left head of the Jaw hinders; nor to the left, because the head of the Jaw in the right side hinders that. In those of ripe age I said, for 'tis well known by Anatomy that the lower Mandible in Infants is cleft, and in the midst of the Chin is joyned with a great deal of Cartilage; which Cartilage if it be relaxed by a flux of humors, or the Chin be struck, that the bone be separated from the Cartilage, perhaps the Jaw may be luxated to the right or left side, the which yet seldom happens, and therefore is not considered. But in the riper aged because that Cartilage hath so degenerated into a bony nature, that it can by no means be separated, no not by boyling, nay not the least footstep almost remains of a line, or any seam, but it appears one continued bone, Physicians do rightly affirm that the luxation can be made only to the fore part. But this Luxation happens, if the former and sharp process, like to a Beak, which by the Greeks is called *Corone*, do slide forth below the *Os jugale*, that it becomes so much lower then it, that it can no more return upwards again into its place; for otherwise though this process be let lower then the *Os jugale*, yet there is not presently a Luxation made, but there

mouth being shut it returns into its place again; but this Luxation is made either in one side only, when only its right or left part slips forth; or in both sides together, when the whole bone of the lower jaw on both sides is fallen out of its seat.

#### The Causes.

But the most common Cause of this Luxation, nay almost the only Cause, is the too much opening and gaping of the mouth, whether it be by yawning, or by taking some heavy burden in the Teeth, and lifting it on high, so that the forenamed process becomes lower than the *Os Jugale*, as was said, and withal be turned aside; for its return into its seat is not prohibited unless it be turned aside. Yet this very thing happens seldom and hardly, and the Jaw is seldom luxated, by reason of the strength of the Muscles by which 'tis tied to the upward parts. For from both processes of the lower jaw arise Nervous and most strong Tendons, with which the Muscles are interwapped which are called *Crotaphite* and *Masseteres*.

#### Signs Diagnostick.

That the jaw is fallen out of its seat may be known in general, because the lower jaw hangs forth to the fore part, and the process of the bone like to a beak stands out by the jaw. For if the process resembling a beak fall out of the *Os Jugale* it must needs be that there also it hang forth, which in a man not very fat is easily known both by sight and touch. The mouth remains open, whence the speech is hindered, and the spittle flows forth involuntarily.

If the jaw be luxated on one part, that with the chin is inclined to the contrary part which is not luxated; the mouth is distorted; whence the Teeth cannot be joyned, neither do they answer to their equals, but the dog-teeth are under the Cutters. In the luxated part there is perceived only a certain bunching our, and the temporal Muscle appears stiff. But if the jaw be luxated on both sides, all of it with the chin hangs forth, and that straight out towards the fore part or to the Breast; the lower Teeth go further out than the upper, yet they answer one to another, the Cutters to Cutters, the Dog-teeth to Dog-teeth; neer the Cheeks on both sides there appears a certain eminency, which the acute beak-like process doth make; the temporal Muscles, whose Tendons this process doth receive, (yea is wholly compassed by them) appear stretch, stiff, and hard.

#### Prognosticks

1. The Luxation of the Mandible is a dangerous evil; and a jaw luxated (as Hippocrates teacheth 2. de Art. and Galen in his Comment) must speedily be replaced; since that the temporal muscles and the Nerves inserted in them (and consequently the brain itself) are easily drawn into

confusion



consent. For the temporal Muscles have the greatest consent with the brain, and do receive nerves from the brain of the third conjugation, from whence do arise not only pains, inflammations, continual feavers, dul sleeps, but also death it self is often hastened about the tenth day.

2. Those whose Mandible is not reduced, are wont to void by stool filthy and thin Choleric; and if they vomit, the vomit is pure.

3. Yet there is greater danger instant; and the replacing is harder if the jaws be luxated on both sides, then if only on one side, whenas all the Muscles with which the jaw is contained are then distended.

### The Cure.

The Mandible luxated shews that it must be reduced into its seat again; which how it ought to be done, Hippocrates teacheth 2. de Artic. t. 15. and 16. in these words. One ought to hold the head of him that is luxated, another the lower jaw, the man gaping as much as he can conveniently, and taking it about the chin with his fingers both within and without, first a little while to stir it up and down, and then with his hand to move it aside, and to command the Patient that holding the luxated jaw he further it, and be very obedient to him moving it. Then endeavor must be used, that at once of a sudden we strike it off of its three figurations; for the lower jaw must at once be promoted from its distortion to its natural position; and it must be driven backwards, and the Patient obeying these ought to shut his mouth, not to gape any longer; and this indeed is the reducing of it, which cannot be done by other figurations; but afterwards a little Physick will suffice, a bolster laid on with a Cerote, we apply a loose binding up; yet we perform this office more safely if the man be bended backward, and his head supported with a leather Cushion well stuffed put under it, that it may yield as little as may be.

If the jaw  
be luxated  
on both  
parts

For we must see first whether the jaw be luxated to both sides or one; if both parts of the jaw are fallen forth, let the Patient be placed on some low seat, and let his head be urged either to the wall, putting between some hard Cushion; or let it be held fast by a servant placed at the back of the Patient, or the Patient lying on his back, as you may see by the figure in Hippocrates in the place alleadged, text 17. let it be held fast by a servant standing at his head, and kept unmovable.

Afterwards the Chirurgeon ought to put both his Thumbs wrapt up in linen on the grinders, but with the rest of his fingers to lay hold on the jaw outwardly about the chin, and try to reduce it by a manner and motion contrary to that which is fallen forth; which he may do, if first of all he draw the jaw downwards; because the temporal

Muscles have snatched the acute process upwards; secondly because the jaw is fallen to the fore part he must force the same to the hinder part; thirdly because it was drawn downwards he must drive it upwards; all which operations a skilful Chirurgeon may speedily and in a moment perform.

But if the jaw be fallen out of its seat only on one side, the way of reducing it is the same, this only must be peculiarly observed, that the Jaw being drawn downwards and forced backwards, afterwards also must be stirred to the opposite side, and at once thrust upwards.

Reduction being made, a Cerote of Wax and Oyl of Roses must be applied to the heads of the Jaw or Temples; and if there were strong extension made, to hinder an Inflammation astringent Medicines must be laid on with the white of an Egg, or others, as in other Luxations.

At last convenient binding up must be made, which must begin from the Chin, and tend towards the crown of the Head, and it must not be loosed before the third day. Let the Patient forbear from much talk, opening of his mouth, and gaping, and chewing of hard meats, and let him be content with Liquids.

If an Inflammation or other grievous Symptom be at hand, that must be conveniently opposed, as hath been often said; and if there be joynted a pain of the Eyes and Neck, we must let blood in the Arm, as Celsus adviseth, l. 8. c. 11. and the Temples and Neck must be anointed with Oyl of Roses and Worms.

### Chap. 4 Of a Luxation of the Channel Bone.

The Channel bone also is sometimes moved out of its seat, which Galen proves by his own example, in l. Hippoc. de artic. com. 1. tex. 62. where he reckons up at large, how when he was thirty five yeers old in the wrestling place this joynt was so luxated that between the top of the shoulder-blade and the throat there was three fingers space, and what was done about it.

But the Channel Bone is luxated either against the Breast bone, or against the top of the shoulder bone; yet both of them seldom happens, by reason of its firm conjunction with both bones.

### Signs Diagnostick.

But a Luxation of this Bone is not easily known; and Ambrose Parry writes, l. 15. c. 11. That he hath known many Chirurgeons, who being deceived have taken a Luxation of the Throat for a Luxation of the top of the Shoulder. But it is known, because the top as it were of the shoulder doth swell, and in the place from whence the Channel Bone is departed there appears a manifest Cavity; there is also a pain, inflammation, and

and an impotency to move and lift up the Arm, and to other motions that are performed by the help of the Shoulder.

### Prognosticks.

1. This bone is hardly reduced and returned into its natural seat, but for the most part hangs forth more or less from the upper part.

2. But unless it be restored the Patient will fail in some motion of his Arm, and cannot move his Hand neither to his Head, nor Mouth.

### The Cure.

This Bone according to the variety of the Luxation requires divers Restitutions. In general, the Arm must be extended, and the channel bone thrust back into its place, which is done, if he lie on his back with a hard Cushion put under his Shoulders, that the Shoulder and Breast may bunch forth outwardly, and by lifting up, pressing down, or drawing the Arm forward, and backward, as need requires, and pressing it with the palm of the hand, this bone may be forced into its seat; afterwards fit Medicines and many bolsters must be laid on, and the part must be bound streightly; which strict binding few men can endure; yet *Galen* writes that he suffered such strange binding, that he could perceive the motion of the Arteries under his Throat.

### Chap. 5. Of a Luxation of the Back bone and Ribs.

**O**ftentimes also the Vertebrae of the Back bone are luxated, and especially those which are in the Back, whence is a bunch in the back; but whereas I have treated of this, *l. 2. par. 2. ch. 11.* I will not do it over again, but send the Reader to that place; two things only I add, the first concerning a Fracture which is made on the outer parts; if it be new, and made by a violent cause, it must presently be replaced by the help of a Chirurgion, of which business do treat *Hippocrates. l. 4. de art. Galen* in his Comment. *Paulus Aegineta, l. 6. c. 177. Oribasius de mach. c. 35. Celsus l. 8. c. 14. Parry, l. 15. c. 15. and 16.*

A Luxation of the Vertebrae outwards:

But because this Evil steals by degrees upon Infants, and 'tis oftentimes hereditary, for the most part it is incurable: yet if there remain any hope of recovery, the Cure is done by convenient Plaisters which bind and strengthen the part affected, on which an Iron Plate must be laid, which by degrees may force the Vertebrae into their place. But that Plate ought to be so long and broad, that it comprehend the whole bunch; and that it may press it the stronger, the inward part which is next the bunch ought to be filled with Cotton closely bumbasted, and covered over with Linnen; but this Plate must be so fastened and

sewed to a Stomacher made of Linnen or Butbaste, that when it is put on it may comprehend the part affected. This Stomacher must be tied with Strings, in other parts moderately, but about the part affected very straight, that the Place may compress the bunching Vertebrae: and if the Luxation be in the Vertebrae of the Loyns, this Stomacher ought to comprehend not only the Breast, but al the lower Belly also, to the Privities.

Such a Plaister may be made.

Take of common Oyl, Hogs grease, of each three ounces; Deers suet one ounce and half; melt them and mix them over the fire, then cast in two ounces of red Lead: Let them boyl with continual stirring til they begin to look black and grow thick; by and by add two ounces of Pitch: Afterwards by degrees strew in two ounces of white Vitriol powdered, then add two ounces of Litharge: and at length when they are almost boyled to a just thicknes, add one ounce and half of Tacamahacca; stir them again and boyl them to the consistence of a Plaister.

*Guilielmus Fabricius Centur. 5. Observ. 67.* propounds such a one.

Take of the Plaister Slotanum half an ounce, new Wax two ounces, Osteocolla one ounce, Powder of the roots of the greater Comfrey, Terra Sigillata, of each three ounces; Powder of Pomegranate flowers, Cypress Nuts, red Roses, of each one ounce; Oyl of Roses or Mastick as much as will suffice; mix them.

But before such Plaisters and Plares be laid on, it will be good for some time before to foment the part with the following Decoction, and to anoyne it to mollesie it, if any thing be hard, that it may be rendered more fit to be replaced. As,

Take of Sage, Marsh-mallows, Flowers of Camomile, Melilote, St. Johns wort, of each one handfull; let them be boyled for a Fomentation.

Take of Oyl of Worms, of Orrace, of white Lilies, of each one ounce; Oynment of Agrippa half an ounce, Dialthea one ounce; mix them.

Secondly, if the Vertebrae be luxated inwards, the restitution of them is altogether more difficult; yet in tender bodies, if the Evil be new, some Plaister firmly sticking to the Skin may be applied to the place affected; and the luxated Vertebrae may be drawn forth thither.

In those of riper age *Guil. Fabricius, Cent. 5. Observ. 69.* thinks an extream Remedy is rather to be attempted, then to relinquish the Patient, who other wise must lead the miserable life of the Disease, or die. To wit (as *Fabricius* teacheth) Incision must be made with a Knife even to the descending appendix of the Vertebra; then through the same Wound putting in the Knife again, two Incisions more must be made, one to the right, the other to the left side of the Appendix; then the

A Luxation of the Vertebrae inwards

Appendix

Appendix being laid hold on by Instruments fit for this purpose, it must be drawn upwards, and the *Vertebra* replaced in its natural seat: but in the interim whiles these things are done, it must needs be that the Back bone be extended, for the *Vertebra* will the easier start into its natural position. The Wound must be small or great according to the greatness of the dislocation; for if only one *Vertebra* be prest in, a small Wound will suffice, but if two or more, it must needs be great, that both the luxated *Vertebrae* may be laid hold on. If a Flux of blood do hinder, so that the operation cannot be done presently after Incision is made, it must be stopt with Hurdz closely wreathed up, and wet with the White of an Egg, and strewed with a powder to stop blood; where this must be observed, that the whole Wound, especially on each side of the Appendix be most carefully filled up with those Hurdz; but that this may be done commodiously, many little pillows must be made of Hurdz wreathed up into this fashion, and so one after another must be thrust into the Wound, till it be filled, afterwards let some Plaster that will stick fast be applied, and let it be bound with a Rowler; after some hours when the blood is stopt, the Hurdz must be taken out gently, that the blood break not forth again; afterwards the Instrument must be applied as was said, but the Instrument must be strong and toothed, as we use in drawing forth a Stone, if two *Vertebrae* be luxated, both must be laid hold on, and that with two Instruments.

There must therefore be two Chirurgeons, who must equally and with one consent draw upwards; moreover let the Chirurgeon have a care, that the Incisions be not made too deep at the sides of the Appendix, by reason of the Nerves which proceed from the Spinal marrow to the sides of the *Vertebrae*; moreover it is necessary, that this operation be done at the beginning of the Disease, while the strength is firm, and before the part affected is possessed with an Inflammation and Tumor; neither makes it any matter whether the Patient be without Speech or Understanding, which sometimes happens. But if the Chirurgeon be not called at the beginning, the second, third, or fourth day at least before the operation, the place must be fomented with the Decoction of Betony, Primrose, Sage, Camomile, Melilore, Roses and Juniper berries; to which he may add some things mollesying as Mallows, Marshmallows, and then try to reduce them; after the operation the Back must be anoynted with Oyl of Roses and Worms, and the Wound also must be handled after the manner of other contused Wounds.

I have writ in the place alleadged, that this operation seems to me not safe enough, and to which few will submit; although *Guil. Fabricius* with *Celsus* l. 3. c. 33. affirms, that it makes no matter, whether the Remedy be safe or not,

which is the only one; and he thinks this operation is not so dangerous, since that in the middle of the Back there are no great Vessels of Veins and Arteries, besides the Nerves in the Appendixes are small.

Of the Luxation of the Ribs hath been spoken, l. 2. p. 2. c. 25.

### Chap. 6. Of a Luxation of the Shoulder.

THE Shoulder bone with its round head covered every where with a Cartilage is joyned to the bosom of the neck of the Shoulder-blade by a most perfect manner of Articulation, and most commodious for the undergoing and performing of all motions, and when as this bosom is not deep enough engraved to receive the head of the Shoulder, lest this Joynt should be subject to often Luxations, provident Nature hath provided by strong Ligaments and a peculiar process, and moreover besides the Cartilage with which she hath pargetted over this bosom, she hath joyned another about it, which indeed grows not to the bosom; yet being tied with Ligaments begins thicker and by degrees is extenuated towards the Center: yet if a violent cause come this Joynt falls out oftener and easier then the rest.

#### The Differences.

But this Joynt falls out downwards (for the most) part or under the Arm-pit hole; for whereas (as *Galen* renders the Causes of this business, *de artic. tex. 2.*) there are six places about every dearticulation, Above and Below, Before and Behind, Without and Within, the inner part of this Joynt by which it tends plainly upwards hath a fleshy part of a Muscle cast over it, which by some is called *Deltoides* from its likeness to the Greek letter  $\Delta$ ; but by that part it declines towards the Neck it hath the back of the Shoulder-blade, where by the conjunction with the Neck-bone the top of the Shoulder is made which is called the *Acromion*; where it looks inward, that process meets with the Shoulder-blade, which for its fashion some call the Anchor-like, some the Cornicular process, which wholly forbids that the Joynt fall forth into that part. But that it may fall into the hinder part, whenas there it leans on the Shoulder-blade, Who is there amongst us that can so much as conceive it? There are four parts then remaining, which want a Guard, into which it is likely the Joynt may fall. *Hippocrates* in the alleadged place admits of no other Species of Luxation of the Shoulder but under the Arm-pit; nay he plainly denies that it can fall forth to the fore part; yet *Galen* hath seen it five times, once in *Asia*, and four times at *Rome*; and no wonder, whenas in the Cities where *Hippocrates* lived there were scarce so many Men, as in one Street at *Rome*, and therefore there were more Examples of Diseases



eases, especially the wrestling place coming into use, by which their Limbs were diversly distorted and perverted. *Parry*, l. 15. c. 21. 29. and 30. adds two differences more, viz. upwards and outwards, but those are very rare, and you may see the places alledged concerning them.

But 'tis doubted whether the shoulder can suffer only a perfect Luxation, or also a Subluxation. *Hippoc.* 1. de artic. tex. 22. denies it, and not without cause and reason; for whenas the head of this joynt is round, and inserted into Cavities which have their brims round, it cannot stay in them; and this is altogether true, if the Luxation happen from an external violent cause; but if the thick humors flow into the bosom of the shoulder-blade, and there by their long stay do stick concentered and hardened, they may by degrees thrust the head of the shoulder out of its seat, and cause an imperfect Luxation; yet this happens seldom in the shoulder, more often in the Hip.

### The Causes.

From which it appears now that the Cause of a perfect Luxation of the shoulder is a violent cause, a fall, a blow, vehement extension or distortion of the Arm; but the cause of a Subluxation is a thick humor fallen into the bosom of the shoulder-blade.

### Signs Diagnostick.

That the shoulder is fallen under the Arm-pit is easily known, and it is most certainly shewn by its proper and inseparable sign, viz. somewhat round and hard under the Arm-pit is sensibly obvious to the touch, to which notwithstanding other signs also are added, not proper, but common; for there appears an unusual Cavity at the top of the shoulder, but that is a common sign, both of the shoulder fallen forth, and of the broad bone of the shoulder blade. In which things that Physicians are often deceived *Galen* teacheth at large both by his own and others example, 1. de artic. tex. 61. the same falling forth of the shoulder is shewed by its unlikeness compared with the sound one, by a sharp bunching out as it were of the upper process of the shoulder-blade, by a departing of the Elbow from the Ribs more than usual, and the difficult and painful bringing of it to them; and the exceeding length and inequality of the same compared with the sound one (unless the shoulder fallen downwards be nevertheless drawn up by the Muscles) and the impotency of the Arm to any motion; which sign also is not inseparable, whenas the Muscles about the shoulders what way soever hurt whether by a Luxation, or by any other Cause, are unfit for motion.

If the shoulder be fallen forth to the fore part, there is seen an unusual Cavity in the hinder part, and too great a bunching out in the fore part,

the head of the shoulder is distorted towards the Breast, the Elbow tends to the hinder parts, and is with difficulty stretcht out to the fore parts, and the signs are wanting of a shoulder luxated into the Arm-pit.

### Prognosticks

1. The head of the shoulder fallen to the fore part is easier reduced than if it be fallen into the Arm-pit.

2. An old Luxation of the shoulder is very hardly reduced, and being replaced it falls forth again.

3. They who have their shoulder reduced (which is true also of other joynts) the parts adjoining being affected with no Inflammation, may presently use their shoulder without any pain; and these think they have no need of any further care or providence, but 'tis the Physicians part to correct their opinion; whenas these have their shoulder more easily fall forth again, then those whose neighboring parts are possessed with an Inflammation, for these cannot use their joynts.

4. They whose head of the shoulder could not be reduced, if they grow still, that shoulder is not equally augmented as the sound ones; and though it be augmented somewhat, yet it is rendered shorter than the other; which happens by reason of the compression of the Muscles and Veins, and because the whole joynt is immovable; but in those who at ripe age have the head of the shoulder break forth, and 'tis not restored, the part which is above the joynt is extenuated, and becomes more slender habited.

### The Cure

That the joynt of the shoulder fallen forth to the Arm-pit may be restored into its seat from which it fell, three things must be done, as *Galen* teacheth, 1. de artic. text. 5. First the head of the shoulder is to be forced to the fore part, then to the upper part, at last to the hinder part, to wit that a contrary way to the Luxation may be undertaken; for the head of the shoulder departing from its proper bosom is first forced to the fore part, secondly by its weight 'tis carried downwards, thirdly 'tis drawn backward to the Arm-pit hole by the Muscles. But if the shoulder be fallen forth to the fore part, it must be forced a contrary way to the hinder part; yet that it may be freed from the Muscles with which it is detained, there must first be some extension of the shoulder made, yet but little.

But the waies of reducing it, as we may see in *Hippocrates*. 1. de artic. and other Authors, are various, of which we will reckon up the chief and most usual, and those which require least preparation, and are most safe.

*The first  
way of re-  
ducing a  
luxated  
shoulder*

The first way is by bringing about the head of the shoulder about the neck of the shoulder-blade, to wit, when the Chirurgeon puts his hand most straightly under the Arm-pit, and wheels about the shoulder with the other hand, that the middle joynts of the fingers force it into its Cavity; which way indeed wants not its danger; for by the circumvolution not only the nervous and membranous bodies, but also the braws of the bosom may be razed, nay the Cartilage compassing the bosom cannot easily be pulled or hurt without great damage; yet it hath its place in children and other softer bodies, so that the Chirurgeon do exercise it warily.

*The second  
way*

The second way is by the heel, after this manner: The Patient must be laid with his back on the ground, and between the hollow of the Arm-pit, the head of the shoulder and the ribs, a bal of a middle size made of Leather or some other matter not very soft must be fitted to it; but the Chirurgeon sitting right against the Patient let him apply his right heel, if the right shoulder be luxated, or his left heel if the left, upon the bal put under the Arm-pit, and with both hands let him draw the shoulder downwards (when the head of it is rapt upwards by the strength of the Muscles) but with his heel let him drive the shoulder at once to the fore part and upwards; and at last let him force backwards the head of the shoulder into the Cavity of the blade; the which he may easily do, whenas the Muscles do not only much help this motion, but oftentimes alone do wholly perfect it. Two Servants may make this way of reducing easier, the one of which with a swathe or rein may draw the shoulder-blade upwards towards the head of the Patient, and by this means facilitate the motion downwards, but let him press with his foot the top of the shoulder, and so he will hinder the shoulder-blade from following, whiles the Chirurgeon draws the shoulder downwards; but let the other hold the opposite sound Arm, and by this means he shall hinder that the whole body do not follow upon the extension made by the Chirurgeon on the affected side. And this way because it is done by a way contrary to the falling forth of the bone, and with extension too, is almost natural, safe, and not so laborious: yet because it wants an impulse, Galen thinks it recedes from a convenient manner.

*The third  
way*

The third way is by a Ladder; and 'tis also safe and commodious enough; to wit a Ladder is raised up firm and fast, upon whose uppermost step there must be bound some round body, which must be fitted to the Arm-pit of the Patient, and may drive forth the head of the shoulder; at the bottom of the Ladder a footstep is placed which the Patient gets upon; afterwards his Arm-pit is placed over that round body, the luxated Arm is

drawn downwards by the Chirurgeon, and the shoulder is moved up and down, in the interim the sound Arm is most strongly drawn downwards at the same time by a servant on the opposite side, and the footstool together is drawn from under the feet of the Patient, that he remains hanging on the Ladder, and by this means the shoulder is restored.

*The fourth  
way*

The fourth way differs not much from this, which is performed by a Pestil. To wit, the Pestil is wrapt up with some soft Swathe, and is thrust between the side and the head of the shoulder; but it must be of that length that the man standing may almost hang upon it; but if it be shorter, let the man sit so that he can scarce cast his shoulder over the Pestil, then let the shoulder and arm be extended along the Pestil, but let another force his body the other way, flinging his hands about his Neck near the Throat; but this way is not so safe, whenas the Pestil under the Arm may easily give way, and there is danger lest that the body slide to this or that part upon extension made on both sides.

*the fifth  
way*

The fifth way seems more commodious, which is done by putting under a shoulder, (they call it Subumeration or under-shouldering) after this manner; let a strong servant and of tall stature put the pit of the Patients Arm over the sharp part of his shoulder, and let him draw the luxated shoulder towards his Breast most quickly and strongly, that the Patient may as it were hang on his shoulder, by which means both the Arm will be extended and the head of the Shoulder moved to the fore part; in the interim let another Servant standing at the back of the Patient press the top of the shoulder that the shoulder-blade follow not with it; let him shake it, and so rule those violent motions with his hands that the luxated Shoulder be reduced into its Cavity engraved in the shoulder-blade. If the Patient be light, let a Boy or some other heavy weight be hanged at his back; lest upon the extension of the Shoulder the whole body do follow, and al the operation of the Chirurgeon be hindered.

*the sixth  
way*

The sixth way, which by Hippocrates is counted the most commodious, is described by him, i. de artic. tex. 19. which Ambrose Parry makes yet more commodious, l. 15. c. 27. which may be seen there: to which way yet some Art may be added, if the Patient sit immovable on a bench, and there be two pieces of wood four or five fingers broad, two fingers thick; one being erected perpendicular must be fastened to its Basis, which must be fashioned to the form of a Crois, of that length that if it be set on the bench on which he sits, it may almost reach under his Arm-pit, which in the upper part must have a point according to its longitude;

rude, into which the other may be put; but let the other be almost three Ells long, and at one end let it have another piece of wood prefixt across almost half an Ell long. Let this wood be a little hollowed an Ell long from its end to which the other wood is prefixt, that it may be inserted to the other piece of wood that is erected, but with the other end touch the bench. Now let the Patient sit unmoved on the Bench, and let that long piece of wood resting on the other erected perpendicular, be so moved to him that that cross piece of wood may be straightly set under the Arm-pit of the Patient, in which part the Luxation is; let the Patient extend the Arm that is hurt, upon that cross piece of wood towards the bench; then let a swathe or rope be cast about the affected Arm about the Elbow (a long Towel is most commodiously used) and let the Arm be wrapped with it til below the Elbow, so that the swathe end in two handles, on each side of the Arm and cross piece of wood; now let the drawing Engine which rests on the bench, such as are used to draw up cross bones, be applied to the end of the cross piece of wood; for which cause let that cross piece of wood with a wooden stake be driven in a cross not far from the end, and the two hooks of that drawing instrument in its upper part be laid hold on with the two handles of the rope or towel; which when 'tis done that Engine must be brought about, as is wont to be done in binding of a bone. For so the Arm is extended by degrees, and is drawn downwards, and the joynt fallen forth is promoted into its place, into which it is drawn and slips either of its own accord by the motion of its Muscles, or by help of the Chirurgeon it must be forced thither with his hand.

Which way differs from the draft of the *Ambi* described by *Parry*, in this; first of al that instead of the *Pillar B.* made with two pieces of wood, here is a pillar of one piece, which in its upper part hath a point, which is sent into the bottom of the *Spatha A.* hollowed in the lower part; next of al in place of that *Spatha* or *Ambi* there is a piece of wood which reacheth from the Shoulder even to the Bench, on which the Patient sits. Thirdly, because that *Spatha*, which is put under the Shoulder hath not a round head, but a cross piece of wood prefixt, which is sent under the Arm-pit. Fourthly, because the Arm is not bound to the *Ambi* or *Spatha*, but only lies upon it, but the swathe which is cast upon the luxated Arm on both sides of the Arm is made fast beneath to that drawing Engine.

For brevity sake we omit many more waies of reducing which present themselves every where in Authors: and of these we have now reckoned up, and others, we may sometimes use this, sometimes that, as they are ready and at hand; for it is not safe to defer the reducing long, til more laborious Instruments are acquired.

If the Shoulder be luxated to the fore part, 'tis restored almost the same waies: as when 'tis fallen into the Arm-pit, to wit, by extending the Shoulder, and drawing its head up and down, and forcing it into its Cavity: It differs only in this, That in this kind of Luxation the Shoulder being drawn downwards must be driven to the hinder part; but the Chirurgeon must have a diligent care, lest the head of the shoulder in the action do fall down into the Arm-pit, which may be done if the Arm-pit be filled up with a bal or some round thing of a just bigness; and this operation may be facilitated by a servant standing at the back of the Patient, and with a rope or strong and broad swathe drawing upwards the shoulder-blade, lest that follow upon the extension of the shoulder made by the Chirurgeon.

The shoulder being reduced, Medicines that do hinder Inflammation and strengthen the relaxt and soft Ligaments must be applied; of which we made mention in the precedent part concerning Fractures, and above Chap. 1. of Luxations in general: the most convenient way of swathing is if a bal made up of Linen or course flax, and dipt in convenient Medicines be put under the Arm-pit, that the head of the shoulder return not thither; let the first swathe be here, afterwards let it be rowled once or twice about the joynt; hence let it be brought to the shoulder-blade, and again descend to the joynt at last that it may draw the Arm the more upwards, and keep it so, let it tend to the neck on the other side, and there be bound, neither let it be loosened before the third or fourth day, unless an Inflammation command otherwise. But the swathe being taken off, or laid on, some Cerote must be applied, viz. *Diapalma* if it be Summer, or if it be Winter, *Barbarum* or *Oxyroceum*.

Last of al we must not pass by here the Luxation of the top of the broad bone of the shoulder-blade, of which *Hippocrates* 2. de artic. tex. 62. hath these words: *But in those in whom the top of the shoulder is pulled off, the bone which is pulled off is seen to stick out. But the bone is that which joyns together the throat and shoulder-blade, whereas in this part the Nature of man is different from other Creatures, Physicians therefore are wont to be most of al deceived in this wound; for when the bone pulled off sticks forth, the upper part of the shoulder appears low and hollow, that they use the means as if the shoulder were fallen out: truly I have known many Physicians in other things good enough, who whiles they endeavor to reduce such shoulders, thinking they were fallen out, have caused much hurt by troubling them, and have not given over til they have changed their opinion, or thinking they had reduced the joynt,*

The shoulder luxated to the fore part

The loosening of the tops of the broad bone of the shoulder blades



joynt they knew not what they should do more; the Cure of these is this, as to others of the like sort, a Cerote, Bolsters, Linen Clothes, and Swathing made after this manner: the bone sticking out must be forced downwards, and on that part many Bolsters must be laid, and they must be prest down very wel, and the Arm must be fastened to the Ribs towards the upper part and kept so; for by no means whatsoever can it be done, that the bone pul'd off can come close and grow together; yet we must wel know, and foretel also that these things are safe, if you would have it otherwise, because neither smal nor great hurt happens to the Shoulder by this Wound, only the place becomes more deformed. For whenas neither this bone can be restored to its ancient seat, after the same manner as it was by Nature, but it must needs be that it be comes little or much strutting out at the upper part; neither doth any thing else return wholly into the same state, which communicating and cohering with another hath been pul'd off from its ancient coherence. In a few daies the pain at the top of the Shoulder is asswaged, if it be bound down rightly. Thus much Hippocrates; see Galen also in his Comment.

### Chap. 7. Of a Luxation of the Elbow and Radius.

THE Elbow and Radius are joyned with the lower head of the Shoulder. The Elbow by a *Gynglymus*, that is, by that kind of Articulation, in which the bones joyned together do mutually receive and are received by one another; for the Shoulder hath in its lower part two bosoms, the former or lesser of which receives the outer process of the Elbow; but the hindermost or greater is devoted to the hinder process of the same; but for receiving of the Radius the Shoulder hath also a peculiar head, called the outer head.

#### The Differences.

From which we may easily collect, that the Elbow may not only be wholly and perfectly luxated, but also may suffer a subluxation: next of all that it may be luxated into all the four Differences of place, forwards, backwards, outwards, inwards; but the Radius as sometimes it follows the Elbow luxated into any part, but sometimes staves in its place; so sometimes it alone falls from the Elbow, without any luxation of it.

#### The Causes.

As the Luxation of other parts proceeds from violent Causes, so this also; and indeed the Luxation of the Elbow to the fore part (for the most part) is from a violent and sudden extension of the Arm; to the hinder part, from a violent bending of the Arm, and outwardly or inwardly, from

a perversion of the Arm; the Causes of a subluxation are humors flowing to the Joynt, which by degrees do fill up the Cavities engraved both in the lower part of the Shoulder-bone, and also in the Elbow and Radius, and do thrust forth the Elbow or Radius out of their seat.

#### The Signs Diagnostick.

It is easily discovered by the Sight and Touch into what part the Elbow is luxated; for if it be fallen to the fore part the Arm is extended and cannot be bent; in the fore part there is seen an unusual Tumor, but in the hinder part an unusual Cavity; things contrary to these do happen, if it be luxated in the hinder part; to wit, the Arm is crooked, and can by no means be extended; the Tumor appears in the hinder part, but the Cavity in the fore part. A Luxation to the outward part makes also a bunching out in the outer part, but a bosom in the inner part; but on the contrary, if the Elbow be fallen to the inward part, there is an eminency less then should be in the inward part, and a Cavity in the outer part.

If the Radius follow the Elbow, 'tis known by the same Signs; but if it only depart from the Elbow without a Luxation, a gaping and disjoyning shews it, the place is hollow, and 'tis easie to find a bosom with the Finger.

#### Prognosticks.

1. The Elbow as it doth not easily fall forth by reason of its firm and fast coarticulation with the Shoulder, and its plenty and strength of Ligaments; so being fallen forth it is hardly restored.

2. The Elbow luxated unless it be most speedily reduced, doth not only bring divers and dangerous Symptoms, to wit, a most exceeding pain, Inflammation, Fever, Convulsion, but sometimes also Death.

3. Of all Luxations which happen in the Gibbous part of the Elbow, the most dangerous and painful is that which is to the hinder part. *Paulus Aegineta, de re medic. l. 6. c. 115.*

4. When the Bone of the Elbow is divided from the other Bone, it is not easily restored; for neither do two bones, which are joyned together, when they once gape, easily return to their ancient place; but it must needs be, that the Bones being so divided, the part becomes swelled, and the bones are quickly compact with a *Callus*.

#### The Cure.

The Elbow being imperfectly luxated or subluxated to the fore part is most easily restored by moderate extension and only bending of the Arm, but a perfect Luxation is harder to be reduced, and requires greater provision; for first there must be extension made and that obliquely (left the high brow of the Elbow hurt the head of the Shoulder) by two Servants, one of which must draw the top

of the Shoulder upwards, but the other the Elbow downwards, either with their Hands only, or if need be with Reins; then some round body must be placed by the brawny part; over which afterwards the Chirurgeon bending his Arm, and suddenly forcing the Elbow to the hinder parts, may restore it into its place.

*Hippocrates 3. de fractu.* affirms that he hath sometimes cured the Elbow luxated to the hinder part, only by a sudden and continued extension of the Arm; which if it suffice not, convenient extension being made the Elbow must be driven inwards.

The Elbow fallen forth to the outer or inner part is most easily reduced, if extension being made, it be forced from that part into which it is fallen, into the contrary.

The same manner of reducing is to be observed in replacing the *Radius*, if it hath followed the Luxation of the Elbow; but if it be only departed from it, it must be prest with the prominent parts of the Hands, and the Arm must be reduced to the natural figure; it being reduced convenient Medicines must be applied, and it must be bound up softly, as was said in general before, c. 7.

### Chap. 8. Of a Luxation of the Hand and its Fingers.

**H**ERE by the name of Hand we understand the Wrist, and After-wrist; but the Wrist is joyned with the Elbow bone and *Radius* by a *Diartrosis*, whereas there is a manifest motion; but with the After-wrist, whereas there is no manifest motion, by a *Synarthrosis* or doubtful articulation; the *Metacarpium* or After-wrist is joyned again with the bones of the Fingers by a *Diartrosis*, because the round heads of the four bones of the After-wrist do conspicuously enter the superficies of the first bones of the Fingers, lightly hollowed; and after this manner also, the bones of the Fingers themselves are joyned one to another.

#### The Differences.

Whence we may easily collect, that the Wrist may be luxated into all four parts, to wit, the fore, the hinder, and to the sides: all the bones of the After-wrist indeed are luxated inwards and outwards, but the falling of the two middle bones to the sides is hindered by the two extreame bones that have respect to the little and Fore-finger, the which two only may fall forth to that side which is free from bordering bones. The bones of the Fingers again are luxated four waies, to wit, inwardly, outwardly, and to the sides.

#### The Causes.

The Cause of the Luxation of the Wrist, After-

wrist, and Fingers, as of other luxations, is some violent Motion, Blow, Fall, Perversion, and Contorsion.

#### Signs Diagnostick.

The Signs of all parts of the Hands luxated are almost common; for whether the bones of the Wrist, After-wrist, or Fingers be luxated to the fore part, a Tumor appears at that place in the fore part, and the Fingers cannot be bent.

If they be fallen to the hinder part, a Tumor also is perceived in the hinder part, and the Fingers by reason of the compression of the Tendons and Nerves going to them cannot be extended.

But if a Luxation be made to the sides, a Tumor appears in that part into which the fall is made; and a depression into that from which the Joynt is fallen.

#### The Prognostick

The Luxation of these parts is not dangerous, whereas they may easily be restored into their place.

#### The Cure

The bones of the Wrist, into what part soever they be luxated, may be without any extension at all reduced into their place, after this manner; let the Hand of the Patient be placed upon a Board or Table, and that with the palm downward if the luxation be to the hinder parts; but with the back downwards, if it be to the fore parts; afterwards let the Chirurgeon most strongly force the luxated Joynt to the contrary part, either with the palm of his Hand in more tender bodies; or with his Heel, in bodies that are stronger.

The same rule is observed in replacing the bones of the After-wrist and Fingers, except that some servant holding with one Hand the Fingers, with the other Hand the Arm; doth make a light extension; the bones being reduced, Medicines that hinder an Inflammation and strengthen the Joynts must be applied, and the part must be conveniently bound up and placed.

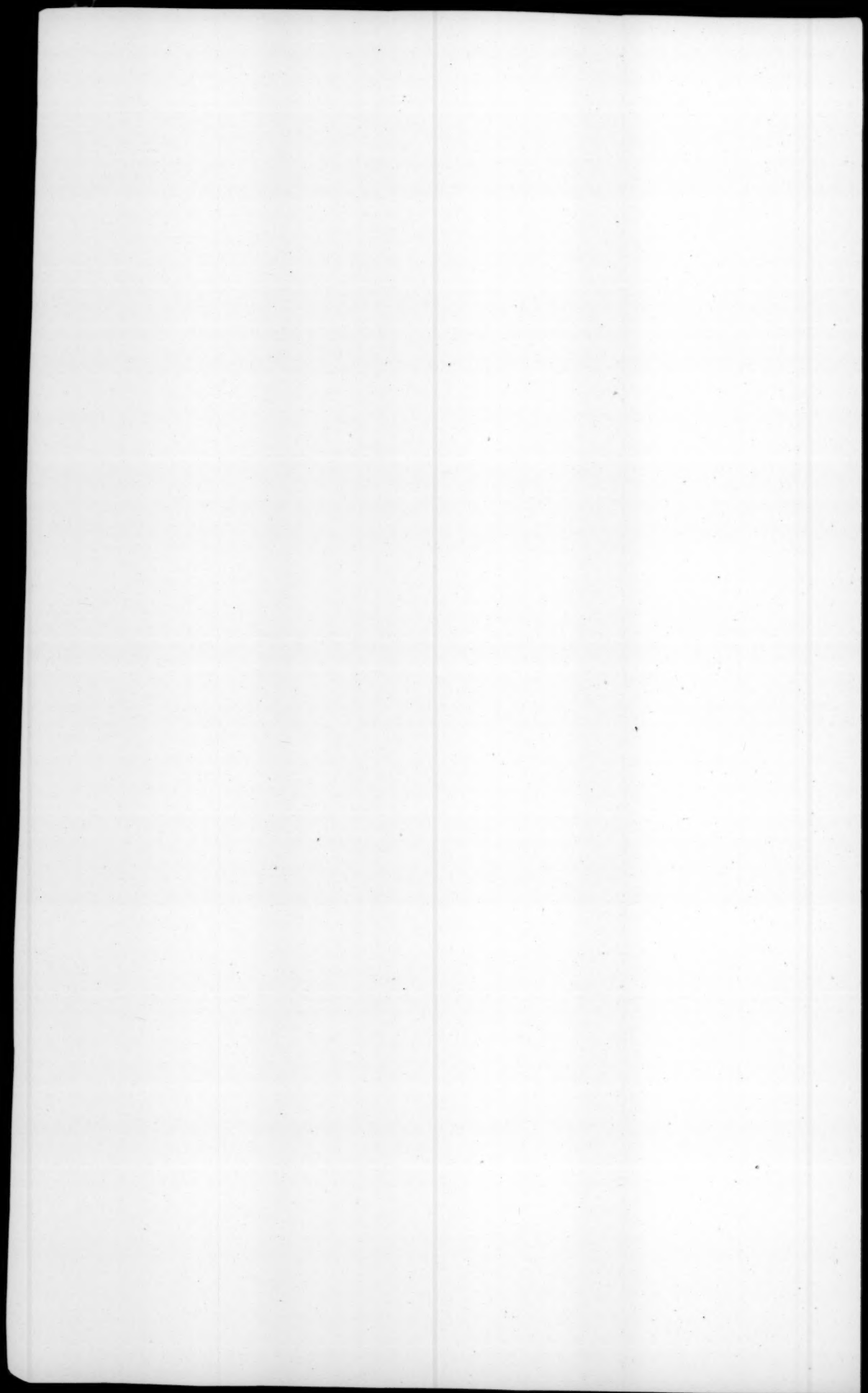
### Chap. 9. Of a Luxation of the Thigh.

**T**HE Thigh-bone, the longest and greatest in the Body of Man, at its upper part with its head sufficiently great, thick, and exactly half Globous, is not only most exactly half joyned by an *Enarthrosis* to the bosom of the Hip sufficiently large and deep to receive this head, but also is most strongly united to it by a most firm Ligament arising from the bosom of the Hip, and implanted into the narrow bosom of the head of the Thigh, to the end that the Thigh might by so much the easier and more readily be bowed, extended, moved to the sides, and turned about, and not easily slip forth.

The







*The Causes.*

The Causes of a perfect Luxation of the Thigh are the same as of the Luxation of the Shoulder, to wit, external and violent, a fall, a blow, or some other violent and indecent extension and distortion of the Thigh; but the causes of an imperfect Luxation are the humors flowing to this joynt, and by degrees thrusting it out of its seat.

*The Differences.*

But this joynt falls forth to four parts, the former, hinder, but seldom, whenas the brow of the Cavity in this part is higher;) to the outer and inward part most often, whenas at that place the brow is lower; and sometimes the Thigh admits of a Subluxation from an internal cause; whence when *Paulus Egineta*, lib. 6. de remed. c. 118. writes that the Articulation of the Hip doth only suffer a Luxation and not a Subluxation, that is to be understood of that only which is from an external and violent cause; for we see oftentimes that by a flux of humors some have the Ligaments in the Thigh relaxt and mollesied, that they cannot retain the head of the Thigh-bone firmly in its Cavity, whence follows a certain Subluxation.

*Signs Diagnostick*

*the Diagnostick signs of a thigh luxated to the fore part.*

If the Thigh be luxated to the fore part, a Tumor appears about the Groins, whenas the head of the Thigh leans to the Pubes; the Buttocks on the contrary, by reason of the Muscles contracted with the Thigh to the Pubes, seem wrinkled; the Urine is supprest by reason of the compression of the bladder by the head of the Thigh, the external Thigh can neither be bent nor brought to the Groin, whenas the head of the Thigh is in the very bending place; the man is also in pain if he be forced to bend his Knee, by reason of the former Muscle, which ariseth from the bone which belongeth to the Loyns; for that is comprest, and being retche is lift up by the head of the Thigh, and whenas it can be no further extended, it resists; otherwise it equals in length the whol sound Thigh to the Heel; for the Thigh going forth of its Cavity comes to the fore part and a little lower, by which it comes to pass that the Thigh hurt equals the length of the sound one, which especially falls out so at the Heel; the Toes of the Foot cannot easily be extended, nor turned to the ground, whence in walking the Patient is compelled to tread only on the Heel. But in them who at strong age have this joynt fallen forth into this part, and not restored, they when the pain ceaseth, and the joynt is accustomed to be contained in that place into which it is fallen, can forthwith go upright without a staff, and wholly upright; for by reason of the inflexi-

bility of the Groyn they use the whol Thigh more straight in going, than when it was sound; sometimes also they draw their foot upon the ground, whenas they cannot easily bend the upper junctures which are at the Groyn and Knee, although they walk upon the whol foot; but in those at whose tender age this joynt fallen forth is not restored, their Thigh-bone is more diminished than that of the Leg or Foot, but the Thigh is little diminished, only the flesh every where is abated, especially at the hinder part.

*to the hinder part.* If the Thigh-bone be luxated to the hinder part, there are contrary signs to those mentioned, to wit, The Head of the Thigh being fallen to the Buttocks is discovered by a Tumor about those parts, both by the sight and touch: the Groyns on the contrary appear more loose; the affected Thigh by reason of the compression and distension of the Muscles compassing the head of the Thigh cannot be extended, and is rendered shorter than the sound one; the heel doth not touch the ground, whence the Patients can neither stand nor go, but fall headlong backwards, because the body slides to that part, and the head of the Thigh being out of its proper place is not directly opposed to underprop the body; yet the man may bend his Thigh if he be not hindered by pain; for whenas the head of the Thighs is by force with its whol neck expelled into the great Muscle of the Buttocks, which extends this Articulation, this Muscle admitting the head of the Thigh fallen forth is most of all tormented, whenas it is distended and preft under it, and of necessity must be seized on by an Inflammation; but in process of time, when this Muscle is freed from an Inflammation, and contracts a certain glutinous humor, that part of it which toucheth the joynt grows to a Callus, and the Knee is bent without any pain; moreover the head of the Thigh being luxated to the hinder part, the Thigh and Foot appear moderately straight, and do not incline much one way nor other.

But when in ripe age the Thigh-bone fallen forth is not restored, when the pain is ceased, and the joynt accustomed to be turned in the flesh, the man indeed may walk, yet he is forced to bow very much towards the Groyn when he walks, and that for two reasons, Because the Thigh is rendered much shorter, and the heel is far off from touching the ground; for if he try never so much to stand on that foot, leaning upon no other thing, he wil every where fall backwards; but if in tender age this joynt luxated after this manner be not reduced, the Thigh-bone is made short, and the whol Thigh is spoiled, and is less increased, and made slenderer, being for no use.

*To the outer.* If the Thigh be luxated to the outer part, it is known by these signs; Between the Anus and Cod there is seen a Cavity and leanness; on the contrary

in the buttocks a certain Tumor; the Thigh by how much the head of it is fallen forth to a higher place, is rendered shorter; the Knee with the Leg looks inwards: the Heel toucheth not the ground; whence when the Patient would walk he goes only a tip-toe.

And if in those of ripe age this Joynt be not restored, but the flesh into which the Joynt is fallen grows callous, and the pain therefore ceaseth, they may go without a Staff; and therefore when they use their Thigh, in these the flesh is less offended; but they to whom in tender age this misfortune happens, require a diligent care; for if they be neglected, the whole Thigh becomes unprofitable, and is little increased; the flesh also of the whole Thigh is more abated, then in the sound one.

Lastly a Luxation of the Thigh to the inner. the inner part is known this way; the Thigh is longer if it be compared with the other, and that for two reasons; for the head of the Thigh sticks to the bone which proceeds from the Hip upwards to the *Peſſen*, and the neck of the Joynt is sustained in its Cavity; again on the outer side the buttock appears hollow, because the head of the Thigh is fallen to the inner part; and the Thigh towards the Knee is forced to look outwards to the outer part; in like manner the Leg and Foot, whenas in all luxated bones one extremitie alwaies looks to the contrary part to that which is fallen forth.

They whose joynt is fallen forth after this manner, and not reduced, when they go they wheel about their Thigh outwardly; for whenas the faulty Thigh is made longer, and by reason of weakness they cannot readily bend the bone, and by reason of pain they refuse to do it, it remains that they must bring it about.

See more of these things in *Hippoc. 3. de artic.* from l. 68. to l. 105. at which for brevities sake I would not transcribe hither.

### Prognosticks.

1. There is great danger in the Thigh, lest that it be hardly reduced, or being reduced that it fall out again. *Celsus l. 8. c. 20.*

2. An old Luxation of the Thigh, which hath already contracted a callus, and in which the bone is filled up with humor, is judged incurable.

3. If by reason of the plenty of the humor collected in the Cavity that Ligament be preternaturally extended, that it causes the Thigh to be moved out of its seat, or if the same Ligament be so relaxed by the humor that it cannot contain the bone in its seat, although the bone be reduced yet it straits not in its place, but falls out again, viz. if the humor remain; but if the humor be dried up, the Joynt may remain in its seat, of which *Hippocrates 6. Aphor. 60.* They who being troubled with a long continued pain of the Hip have

the head of the Thigh fallen forth of the Hip, their Thigh wasteth, and becomes lame unless they be burnt.

4. The same comes to pass if that Ligament be broken.

5. If the luxated Thigh be not reduced, the neighboring parts are wasted by degrees, for both the Arteries and Veins are streightened and compressed, that there is not a free passage open for the blood and spirits to those parts; and because the part is not moved after its due manner, the heat fadeth, whence the nourishment of the part is not rightly accomplished, and the Thigh-bone is not encreased according to the proportion of the rest of the bones.

### The Cure.

Whereas after the same manner almost as the Shoulder is joyned with the Shoulder-blade, so the Thigh is with the Hip-bone, so the way of reducing them both is almost the same. The Patient must be placed upon a Bench or Table, putting a Pillow or Bed under him, with his Face downward if the Luxation be made outward or backward, with his face upwards if inwards, and upon his side if forwards; and this reducing is done sometimes only with the Hands without any extension; as first of all either let the head of the Thigh be so long wheeled about the Loyns till it come into its Cavity (which way notwithstanding is not so safe) or secondly (to wit, in a Luxation made to the inner part) let the Thigh most quickly and strongly be bent to the Groyns, and by this means let the head of the Thigh fallen forth be forced outward into its place; but if no good be done by these waies, the Patient must alwaies be so placed, that the part into which the head of the Thigh is fallen, be uppermost, but that from which it is departed, lowermost; afterwards convenient extension must be made, and at length the Thigh must be forced into its Cavity alwaies a way contrary to its falling forth; but how a lawfull and convenient extension is to be made, either with the hands, to wit, in soft bodies a new luxation; or with Reins, Ropes, and the like, to wit, in strong bodies and an old luxation, doth sufficiently appear from those things which are said in the precedent part, c. 11. of the Fracture of the Thigh; and truly the extension may be common to the four species of a luxated Thigh; but the manner of forcing and restoring the head of the Thigh into its place varies according to the variety of the parts to which it is fallen: for that which is fallen inwards must be forced outwards, that outwards, inwards, and so of the rest; when the bone is reduced, which is known by the free motion of the Thigh and without any pain, the Medicines of which we spake formerly in general, c. 1. must be laid on the Joynt, and with rowling the Joynt must be kept in its place; straw beds also as in Fractures must be applied, and both Thighs

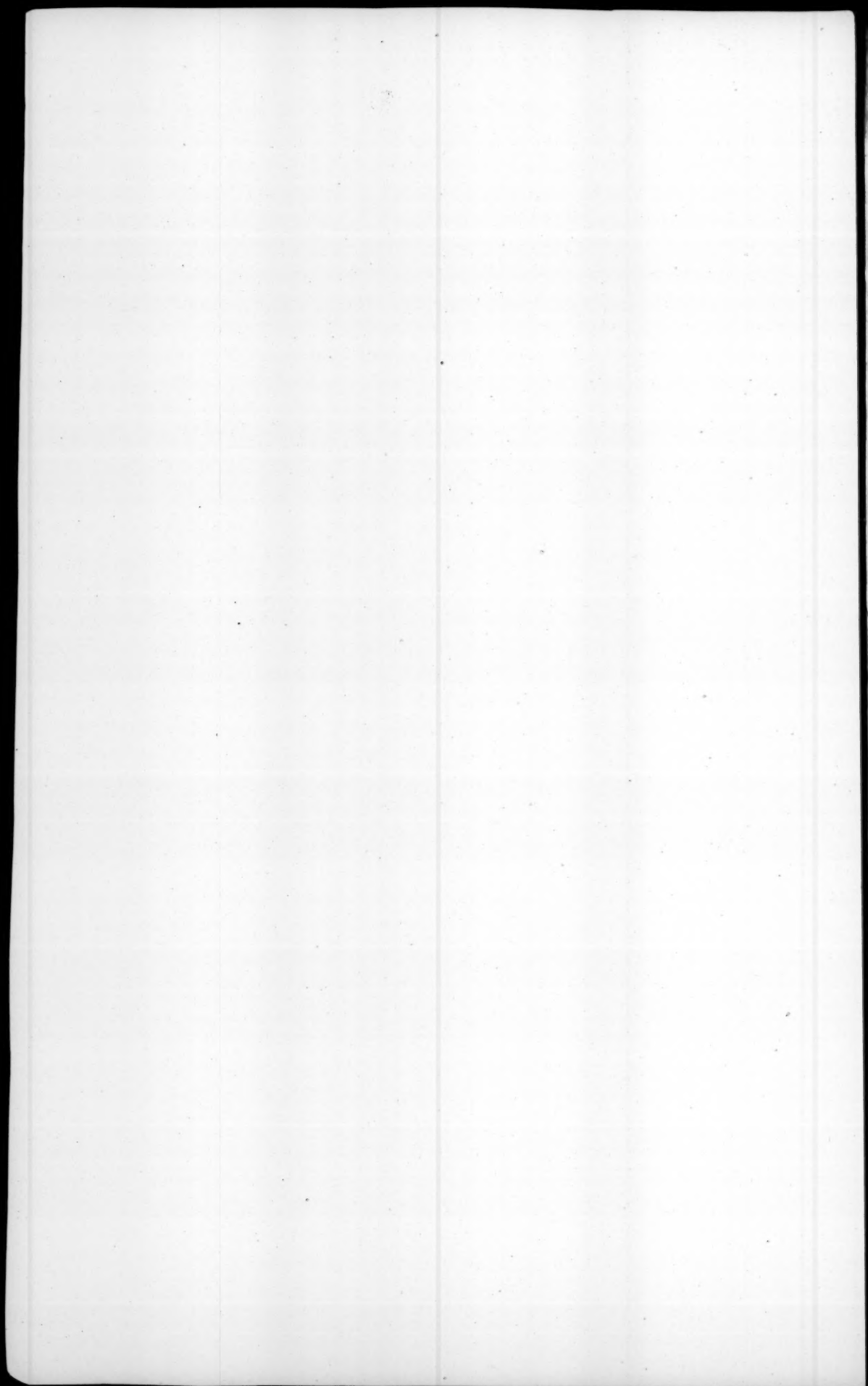
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be kept in its place; straw beds also as in fractures must be applied, and both Thighs be bound that the luxated Member may be kept in its place; and this provision must not be loosed before the fourth day; and let the Patient keep himself long enough in bed, nor let him walk, lest by unseasonable walking the bone fall forth again.

See more in *Hippocrates*, *Paulus Aegineta*, l. 6. c. 119. *Ambrose Parry*, l. 15. from c. 39. to c. 48.

### Chap. 10 Of a Luxation of the patel Bone

**T**He Thigh in its lower part hath two eminent heads tending to the hinder part, with which it is inserted into two bosoms of the leg-bone, only superficial ones, and no waies deep, and pargetted over with a smooth cartilage; it hath moreover in its hinder part a certain bosom, into which the bunching forth of the Leg-bone that stands forth betwixt its two bosoms is inserted: but lest that by reason of this looser Articulation, which is by a *Ginglymus*, the Knee should be subject to frequent Luxations; on the fore part the patel bone is set over the bone of the Thigh and Legg, and firmly joyned to them by benefit of the thick Tendons of the Muscles extending the Leg; besides on the out side of the greater bone stands the Bracer, which at its upper part in the inner side hath a bosom covered with a Cartilage, by which the little side head is received, which subsists at the upper Appendix of the great Bone; but at its lower part, with its acute angle 'tis inserted into the external and oblong bosom of the lower Appendix of the great Bone, and makes the outward Ankle: whenas therefore here concur many Articulations, also many Luxations may happen.

**A Luxation of the Kneepan** And truly first of al, The Patel Bone whenas it hath no obstacle on the sides hindering its dislocation, may be most easily luxated, to the upper, lower, outward, and inner part, but never to the hinder part, in regard that the bones of the greater Focil and Thigh which it covers do hinder it.

#### The Causes.

The Causes of this Luxation are, a fall from on high, jumping, blows, and an undecent distension of the Leg.

#### Signs Diagnostick:

The Luxation of the Patel Bone is easily known by the sight and touch, and the Thigh cannot rightly be bent and moved.

#### Prognosticks.

Whenas this Articulation is more loose, the Patel Bone may easily be restored to its seat.

#### The Cure.

That the Patel bone may be reduced into its seat, let the Patient stand firmly upright upon a place; but let the Chirurgion with his hands force the Patel Bone from that part into which it is fallen, to that from whence it is fallen; when the Bone is restored to its place, fit Medicines must be laid upon it, and the hollow of the Knee must be filled up with Bolsters that the Thigh cannot be bent; then a hollow piece of the figure of the Patel Bone must be placed about it, especially on the side to which it fell, that the Patient may not bend his Knee. When there is no more danger lest the Patel Bone fall out again, let the Patient by degrees accustom to bend his Knee again.

### Chap. 11. Of the Knee Luxated.

**T**He Knee may not only be Subluxated, but it may suffer a perfect Luxation; and truly oftentimes falls to the inward and outward part, seldom to the hinder part, but seldome of al to the fore part, and not unless from a most violent cause, in regard that the opposition of the Patel Bone doth hinder it.

#### The Causes

This Luxation also happens from blows, falls, jumping, vehement running, and an uncomely extension or contraction, and distortion of the Legg.

#### Signs Diagnostick.

To what part the Knee is Luxated is easily known; for in the side to which the joynt is broke forth a bunching out, but a Cavity in the side from which it is departed is discoverable both by the sight and touch: its figure is depraved, the Thigh is extended and cannot be bent, whence the motion is necessarily depraved, or wholly lost.

#### Prognosticks

1. The Knee if it be compared with the Elbow, the joynt in the Knee, by reason of its manner of juncture, oftener falls out, and is easier reduced. For the structure of the Bones with which both joynts are contained is more straight in the Elbow, more loose in the Knee; besides, many processes and many bosoms joyned to one another do every where bind up the joynting of the Elbow, but in the Knee the bunchings forth of the Thigh are cast into the sinall Bosoms of the Leg.

2. For the same cause a Luxation of the knee is less dangerous, nor doth an Inflammation easily happen; for whenas an Inflammation ariseth from the force with which the bones are expelled and reduced again, and the pain arising from hence, because in the Knee the joynts may fall forth and



be reduced without any great force, there is no fear of an Inflammation.

### *The Cure.*

The Knee luxated to the inward and outward part is not hard to be restored by moderate extension made, either with the hands in a new Luxation and child's body, or with reins in a Luxation not so late, and stronger bodies; and with forcing the bones with the hand into the contrary part from which they fell.

But a Luxation made backwards is commodiously restored, if the Patient be placed with his Face on a Bench, and some servant put a Linen Globe into the hollow of the Ham at what part the Bone sticks forth, and strongly force the bone fallen forth towards the fore parts; but let the Chirurgion take hold of the lame Leg with both hands, and of a sudden so bend and bow it that his Heel touch his Buttock.

A Knee Subluxated by none or very little extension made, and forcing it to the contrary part is reduced into its place.

When the Bone is reduced, which is known by the free extension of the Leg, and comparing it with the other Knee, convenient Medicines must be laid upon it, and binding up must be ordered, and the Patient must forbear going til there be no more fear of a new Luxation.

### *Chap. 12 Of the Distraction of the Bracer.*

**T**He Bracer adheres to the greater Bone of the Leg, and as it was said in the former Chapter, above to the Knee, below the Ankle; but is drawn from the great Bone three waies, to wit, To the fore part, and both sides.

#### *The Causes.*

But this Divulsion comes from those Causes from which we said the Knee was luxated, especially when walking in a slippery place the foot is not firm, but dubiously is wrinched inwardly or outwardly; the same may be by a fall from on high, or by a blow.

#### *Signs Diagnostick.*

A Tumor appears in the part to which the Bracer is distracted, and is discovered by the sight and touch; and motion is hurt.

#### *The Prognostick*

The reducing of the Bracer is easie.

#### *The Cure*

For by the hands of the Chirurgion it may easily be compelled and brought back into its seat by forcing it into that part contrary to its fall: afterwards convenient binding up must be ordered,

putting bolsters to that part to which the Bracer is fallen; and rest for some weeks must be commanded the Patient, til the Ligaments are confirmed again.

### *Chap. 13 Of a Luxation of the Foot and its Bones, and of the Toes.*

**B**Y the word *Foot* we understand al that part of Mans Body reaching out from the lower part of the Leg to the very ends of the Toes, which contains divers Bones after divers manners joyned together, and united by Membranous Ligaments, to wit, The Ankle, the Heel, the Ship-like Bone, the *Tarsus*, *Metatarsus*, and Bones of the Toes; of the Luxations of al which we should now speak; but because the Bones of the *Tarsus*, *Metatarsus*, and Toes, are here united almost after the same manner as the Bones of the Wrist, after-Wrist, and Fingers are to one another, they are subject also to the same Luxations, have the same causes, are known by the same signs, and are reduced the same way; but the ship-like bone may suffer the same things as the Bones of the *Tarsus*; it is not worth our labor to add much of these, but those things which are said of the bones of the Hand may also be applied to these. Some things only we shal add of the Luxation of the Ankle and Heel, whenas no Bones in the Hand do answer unto these.

*Luxation of the Ankle and Heel*

#### *The Differences.*

The Ankle joyned with the greater and lesser foci by a *Ginglymus* may be luxated perfectly and imperfectly to every part, to wit, The outward, inward, fore, and back part.

But the Heel lying under the Ankle is often moved indeed more forward and backward, but seldom to the sides.

#### *The Causes.*

The Luxation of these parts is from a violent fall, a blow, or some other inconvenient distortion of the Foot. But in particular the Heel is luxated, and pulled from the Ankle, if one leaping from on high do fall and stick heavily upon the Heel, or in dancing doth insist much upon the Heel.

#### *The Signs Diagnostick.*

The Ankle if it be fallen to the outward part, the lower part of the Foot is turned inwardly; if to the inward part, there are contrary signs; if it be luxated to the fore part, the broad Tendon stretcht under the Heel is hard and retcht, and the Foot is less and shorter; if to the hinder part, on the contrary the Heel is almost hid, the Soal seems

seems to become greater, and the Foot longer.

A Luxation of the Heel is easily known by the pain, the figure of the part depraved, and its action hurt.

### Prognosticks.

1. The Ankle as 'tis easily luxated, so 'tis easily also reduced; but by reason of the multitude of Bones making up the joynts 'tis hardly confirmed.

2. A Luxation of the Heel is most dangerous, because the Veins, Arteries, and greater Nerves which it receives, and also the Tendon which is joyned to it, are easily drawn into consent; whence may be raised, Ravings, Tremblings, Convulsions, Feavers, and many other evils.

### The Cure.

Let a Commodious extension go before the reducing of the Ankle; whether it be done by the hands of Servants, one of which must hold the Foot, the other the Legg; or with reins or

other engines that draw downwards; afterwards let the Chirurgeon force the joynt to the contrary part from which it is fallen, and order a convenient binding up. The Patient in this Luxation must be kept longer in his bed, that the distended Muscles and the Ligaments which are rendered more loose may acquire their just strength, and may be fit to bear the whol body, which scarce happens before the fortieth day.

The Heel also upon light extension made is reduced to its ancient place; being reduced it must be so bound up that the humors abounding may be driven from it to other parts; the Patient also must be so long kept quiet, til this joynt restored be wel confirmed.

See more concerning Luxations in *Hippocrates* in *l. de artic. et fractur.* and *Galen* in his *Comment.* *Oribasius de machinamentis.* *Celsus l. 8. c. 11.* to the end of the Book. *Gabriel Fallopius, tract. de Luxation.* *Ambrose Parry, l. 15.* and others.

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